PN-ACG-510

FINAL REPORT

Effective Strategies to Promote Quality Maternal and Newborn Care

May 3-5 Washington, D.C.

The followmg projects, through USAID support have contributed to the meeting

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Acronym List

Organizations/Agencies

ACNM	American College of Nurse-Midwives
ADRA	Adventist Development Relief Agency
AED	Academy for Educational Development
BHR/PVC	Bureau of Humanitarian Relief/Private Voluntary Cooperation (USAID)
CARE-MoRR	Cooperative and Assistance for Relief Everywhere-Management of Reproductive Risk
CEDPA	The Centre for Development and Population Activities
CDC	U.S. Centers for Disease Control and Prevention
CLAP	Centro Latinoamericano de Perinatologia
The CORE Group	The Child Survival Collaborations and Resources Group
INACG	International Nutritional Anemia Consultative Group
JHSPH	Johns Hopkins School of Hygiene and Public Health
JHPIEGO	JHPIEGO
JSI, Inc.	John Snow, Incorporated
MOE	Ministry of Education
MOH	Ministry of Health
PATH	Program for Appropriate Technology in Health
PCI	Population Concern International
PHN	Population, Health, and Nutrition Division of USAID
UNAIDS	Joint United Nations Program on HIV/AIDS
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
WB	World Bank
WHO	World Health Organization

Technical Terms

AIDS	Acquired Immunodeficiency Syndrome
ARI	Acute Respiratory Infection
ARV	Antiretroviral therapy
BF	Breastfeeding
CQ	Chloroquine
EOC	Emergency Obstetric Care
FGD	Focus Group Discussion
HIV	Human Immunodeficiency Virus
IEC	Information, Education, and Communication
IFA	Iron Folic Acid
IPT	Intermittent Presumptive Therapy
IR	Intermediate Results (USAID)
IMCI	Integrated Management of Childhood Illness
KAP	Knowledge, Attitudes, and Practices survey
LBW	Low Birth Weight
MCH	Maternal Child Health
MNH	Maternal Neonatal Health
MTCT	Mother-To-Child-Transmission
NGO	Non-Governmental Organization
ORS	Oral Rehydration Solution
PVO	Private Voluntary Organization
RF	Replacement Feeding
RAMOS	Reproductive Age Mortality Survey
STD	Sexually Transmitted Disease
STI	Sexually Transmitted Infection
SOS	Strategic Objectives (USAID)
SSO	Strategic Support Objectives (USAID)
SP	Sulfadoxine-pyrimethamine
TBA	Traditional Birth Attendant
TT	Tetanus Toxoid
VCT	Voluntary Counseling and Testing
XN	Night Blindness

ACKNOWLEDGMENTS

On behalf of its membership, The Child Survival Collaborations and Resources Group (The CORE Group) would like to express appreciation to the organizations that provided support for the "Effective Strategies to Promote Quality Maternal and Newborn Care" workshop: The United States Agency for International Development's (USAID) Bureau for Humanitarian Relief/Private Voluntary Cooperation (BHR/PVC); and USAID's Global Center for Population, Health, and Nutrition (USAID/PHN) through its support of NGO Networks for Health (Non-Governmental Organizations for Health), and CARE-MoRR (Cooperative for Assistance and Relief Everywhere-Management of Reproductive Risk).

We would also like to express our thanks to the following organizations that participated in the workshop: USAID/PHN; BASICS, LINKAGES, PLAN International, Project Concern International, The Manoff Group, The Centre for Population and Development Activities (CEDPA), MACRO International, Inc., Maternal Neonatal Health Program, Johns Hopkins University, Program for Appropriate Technology in Health (PATH), The MotherCare Project, American College of Nurse-Midwives/PRIME, U.S. Centers for Disease Control and Prevention (CDC), and the United Nations Population Fund.

Special thanks to the members of The CORE Group's Safe Motherhood/Reproductive Health Working Group, which spent many hours planning this workshop, and to the organizations they represent for supporting their involvement.

Members of The CORE Group Safe Motherhood/Reproductive Health Working Group are:

Co-Chair, Susan Rae Ross, CARE; Co-Chair, Mary Beth Powers, Save the Children Federation; Incoming Co-Chair, Theresa Shaver, NGO Networks for Health; Marguerite Joseph, Africare; Sara Lewis Espada, Andean Rural Health Care; Frank Anderson/Anne Hirschey, BHR/PVC; Mary Anne Javed, Christian Children's Fund; Nomajoni Ntombela, LINKAGES; Cindy Stanton, MACRO International, Inc.; Kristine Rittenbach-Brunkow, Pearl S. Buck Foundation; Jennifer Winestock Luna, PLAN International; Gail Montano, Project Concern International; Bettina Schwethelm, Project HOPE; David Oot, Save the Children Federation.

FORWARD

Debbie Armbruster, CNM, MPH
Director, Special Projects Section
American College of Nurse-Midwives (ACNM)

A hearty and sincere congratulations to the organizers of the workshop, "Effective Strategies to Promote Quality Maternal and Newborn Care." The CORE Group, with the collaboration of NGO Networks for Health and CARE-MoRR, are to be commended for their ability to select for presentation pertinent and timely issues, research, and strategies on maternal and neonatal health.

As the state-of-the-art in safe motherhood is evolving, private voluntary organizations (PVOs) need to keep pace with the latest thinking and research on appropriate interventions that can really make a difference to mothers' and newborns' lives. With this intent, The CORE Group sponsored the "Effective Strategies to Promote Quality Maternal and Newborn Care" workshop. The leadership of The CORE Group and, more recently, of NGO Networks for Health and CARE-MoRR, has been actively working to support, share experiences and lessons learned with, and improve the knowledge and skills of PVOs interested in including maternal health/reduction of maternal mortality in their child survival programs.

In the field of international development, PVOs' comparative advantage is their ability to work at the community level and to be more connected with the grassroots concerns of women, children, and families than are the various levels of the health care system. Recognizing the importance of this role, USAID has increasingly spotlighted and supported PVOs' efforts. The Child Survival Grant Program sponsored by USAID BHR/PVC is one example of this support. With the backing and leadership of Kate Jones, Chief of the Child Survival Grant Program, child survival PVOs understood that pregnancy involves a dyad of the mother and the fetus, thus their survival is intrinsically linked. Poor maternal health significantly affects neonatal outcomes. As a result, PVO child survival programs have increasingly emphasized maternal health.

ACNM has been privileged over the past several years to work with PVOs in the area of maternal and, to a lesser extent, neonatal health. As maternal health advisors, ACNM has worked with the BHR/PVC, with funding from The MotherCare Project, to upgrade the capabilities and expertise of PVOs in this area. A PVO itself, ACNM has been impressed with the capabilities, interest, commitment, and quality of the work of the PVOs involved in child survival activities.

The workshop was outstanding. Presentations and discussion by many of the leaders in the field of maternal and neonatal health, particularly those working at the community level, made a significant contribution towards strengthening community-based maternal and neonatal health and reducing maternal and neonatal mortality. Comments from participants as well as the formal evaluations indicate that the workshop successfully met the needs of PVOs. As previously stated, the organizers are to be commended.

INTRODUCTION

Every year, 585,000 women worldwide die as a result of pregnancy-related complications—*one death every minute*. Mortality is the tip of the iceberg; even when women survive, about 64 million suffer serious chronic and usually debilitating morbidities as a result of pregnancy-related complications. In addition, approximately eight million infants die annually, at birth or shortly thereafter—*a number equivalent to the population of New York City*. If we take significant multi-level action, we can reduce the number of women and babies that are dying. If we do not act, more will die.

Workshop Objectives

For 10 months, The CORE Group Safe Motherhood/Reproductive Health Working Group planned this three-day participatory workshop, "Effective Strategies to Promote Quality Maternal and Newborn Care," in which representatives of the PVO community, Cooperating Agencies, and USAID were made privy to some of the best current beliefs and practices in antenatal care, community and emergency obstetric care, and post-partum and newborn care. The workshop was organized to achieve the following objectives:

- enhanced understanding among PVO headquarters and field personnel of the causes of maternal and newborn mortality and morbidity;
- enhanced understanding among PVO headquarters and field personnel of the effectiveness of various program interventions to address these complex problems;
- increased knowledge of workshop participants of others' experiences addressing the comprehensive package of reproductive health interventions required to save mothers' and newborn's lives; and
- effective maternal and newborn health interventions designed through the analysis of case studies done in small groups.

Background

The CORE Group is an association of 35 U.S. nonprofit international development organizations that design, implement, and evaluate USAID/BHR/PVC-funded community-based child survival projects that seek to reduce childhood and maternal mortality and morbidity. The CORE Group collaborates with U.S. and international organizations and local counterparts to improve the health of women and children worldwide. It also provides a voice for PVOs in forming policies that affect PVO and community health programs. Since 1978, when USAID/BHR/PVC began awarding child survival grants, The CORE Group PVOs have risen to the challenge providing expertise in community mobilization, behavioral change communication, strengthening of health care systems, and sustainable programming.

The CORE Group facilitates collaboration among its members and pools their expertise to share lessons learned, develop successful methodologies, document best practices, and conduct capacity-building activities. The CORE Group has seven working groups, each of which addresses a specific health topic or technical area. Among these is the Safe Motherhood/Reproductive Health Working Group.

USAID Strategies
Miriam Labbok
United States Agency for International Development

Dr. Labbok began this introductory session noting the growing interest in the area of safe motherhood within USAID. She then commented on some important recent nuances affecting the field, including a movement to convince Congress of its importance. Bill Gates recently funded a program at Columbia University that will be exploring the clinical aspects of safe motherhood, and expanding the building facilities in which to conduct the research. At the same time, the World Health Organization (WHO) has released a policy statement regarding the importance of safe motherhood, indicating that "Making Pregnancy Safer" will be a major initiative for them in the future. In addition, there are new colleagues at the United Nations Children's Fund (UNICEF) interested in pushing the safe motherhood agenda.

Dr. Labbok conducted a multimedia presentation beginning with slides that addressed the life cycle approach to health and survival as it applies to the area of safe motherhood. She explained that no matter where one begins, the life cycles split into two different paths: the mother or the child. Dr. Labbok stressed that the paths of both are interrelated and affect each other, and emphasized the need to consider the mother and child jointly.

USAID's strategy includes an approach to health and development with technical interventions along the life cycle continuum. For USAID, intervention in maternal-neonatal health means interventions in five key areas: **family planning**, including delay and birth spacing and post abortion care; **nutrition**; **birth preparedness**, including essential antenatal care, planning for transport, and prevention/treatment of infections; **management of complications**, including community essential obstetric care (EOC), and life saving skills; and **attended births and neonatal/post-partum care**, both immediate and during the first seven days, and including breastfeeding and maternal nutrition.

The data demonstrate that a three-year or longer child spacing interval is safest and tremendously important for the health of the infant.

Dr. Labbok continued with overhead projections that described more about USAID's current focus in population, health, and nutrition. USAID's goal is stabilizing world population growth and protecting human health. Under that goal, there are five Strategic Objectives (SOs). The Population, Health, and Nutrition (PHN) section has translated these into Strategic Support Objectives (SSOs). Focusing on the SSO most closely related to safe motherhood, "increased use of key maternal health and nutrition interventions," Dr. Labbok discussed USAID's use of Intermediate Results (IRs) as mechanisms to measure progress in achieving the SSOs. The Intermediate Results are as follows: (1) identification, development, evaluation and/or dissemination of effective and appropriate maternal health and nutrition interventions and approaches; (2) improved policy environment for maternal health and nutrition programs; (3) improved capabilities of individuals, families, and communities to protect and enhance maternal health and nutrition; and (4) increased access to and availability and quality of maternal health and nutrition services.

Dr. Labbok then discussed data demonstrating how birth spacing saves children's lives and improves maternal nutritional status. The data demonstrate that a three-year or longer child spacing interval is safest and tremendously important for the health of the infant. The relative risk of infant mortality of short birth intervals (17 months or less) is two to four times higher than with longer intervals (36 months or longer). Returning to her position that we need to consider jointly the mother and the child, in

an integrated approach the issue then becomes whether longer intervals between pregnancies also benefit the mother. How does the increased interval benefit the mother in the mother-infant dyad?

The interventions that make sense for maternal health and nutrition also benefit the infant's health and nutrition. Mothers need food and nutrients to maintain their own bodies as well as to fuel the work they do. By spacing births, mothers give their bodies time to recover from the impact of pregnancy and breastfeeding. To achieve adequate spacing, they need access to breastfeeding support and family planning introduction, as well as to information about the positive aspects of spacing. Optimally, mothers will be able to decrease their work load as well, increase breastfeeding of their infants, and space or delay subsequent births. As with the birth spacing benefits to the infant, the healthiest interval for the mother is also three years. For maternal and child survival, health is an integrated issue—what is good for one is nearly always good for the other.

USAID STRATEGIES

RECOMMENDATIONS

- Promote breastfeeding, timely introduction of family planning, and three or more years of birth spacing.
- If there is supplemental food to be had, feed the mom while encouraging her to breast-feed the infant.
- Ensure that the community knows that each pregnancy carries risk; the community must be prepared for unexpected emergency transport for each pregnant woman.
- Support the availability of essential obstetric care, basic or advanced, at every health facility.
- Help each pregnant woman access a trained attendant to assist at birth and neonatal resuscitation, and to follow-up for the first seven to 42 days.

Maternal Mortality/Morbidity
Dr. France Donnay
United Nations Population Fund

Dr. Donnay began her presentation with a definition of maternal death: "The death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and the site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management, but not from accidental or incidental causes." She noted some points of contention with this definition: some want to include deaths within one year; there is a challenge to the phrase "pregnancy aggravates certain conditions" (as opposed to conditions that aggravate the pregnancy); and developed countries want to include deaths of pregnant women from car accidents, which they consider just as devastating as death from the pregnancy itself (developing countries consider the former irrelevant within this context of maternal mortality).

Estimates of maternal deaths have recently been revised upwards by about 100,000 deaths per year bringing the annual estimate to almost 600,000. There is much controversy surrounding these estimates, however. Data sources for maternal mortality include vital registration systems, household surveys, Reproductive Age Mortality surveys (RAMOS), hospital data, and census data. Measurement problems are related to the rarity of the event (in numerical terms, but not in some communities), under reporting, and misclassification. The situation is improving, and we are getting better estimates but, maintained Dr. Donnay, we need new indicators—process indicators—that are more directly linked to programs (e.g., births attended by trained professional and semi-professional personnel). This, and not maternal mortality rates, was the indicator used in the conference document of the International Conference on Population and Development.

Some other indicators are EOC coverage, proportion of all births in basic and comprehensive EOC facilities, and Cesarian sections as a percent of all births.

The estimated lifetime risk of maternal death for an average women varies depending upon region. In Africa, the risk is one in 21; Africa has a high fertility rate and low access to care. By contrast, in northern Europe, it is one in 9,850. India has the largest share of maternal deaths and Nigeria the second largest. Fifty percent of maternal deaths in absolute numbers occur in five countries (India, Nigeria, Bangladesh, Indonesia, and Ethiopia), with Asia having the largest share.

The estimated lifetime risk of maternal death for an average women varies depending upon region. In Africa, the risk is one in 21; in northern Europe, it is one in 9,850.

There is little known about maternal morbidity, defined as "morbidity that occurs during pregnancy or within 42 days of termination but may persist beyond this time. Morbidity caused by treatment of obstetric conditions or by traditional practices." There are very few numbers and major discrepancies between those that are self-reported and those evident in medical exams. We need to improve relevant databases. About 40 percent of pregnant women develop complications and require some care. About 15 percent develop serious complications. An unknown proportion develop long-term complications.

Participant discussion following her presentation explored further the difficulties in measuring maternal mortality and morbidity. Dr. Donnay linked the lack of data, interventions, and impact indicators to the low status of women in society. She emphasized the importance of process indicators to assist to develop interventions, and the role of the NGO community in ensuring that these indicators get collected. NGOs have good relationships within communities, which facilitates gathering this type of information—they can address why deaths occur at the community level. NGOs also have a role in advocacy and local level health planning.

MATERNAL MORTALITY/MORBIDITY

RECOMMENDATIONS

- Monitor progress towards reduction of maternal mortality by using process indicators such as "births attended by skilled attendants, professionally trained and regularly supervised" and "number and geographic distribution of facilities offering EOC;" population-based indicators; and facility-based indicators, such as "proportion of women with complications treated in these facilities," "Cesarean section rate," and "case-fatality rate."
- Advocate for community-based monitoring systems, particularly maternal and neonatal death audits, and "near-miss" audits, that allow for analysis of causes of deaths and development of possible actions.

Neonatal Mortality/Morbidity

Judith Moore
BASICS/John Snow, Inc.

Ms. Moore's presentation covered definitions, global figures and facts, main causes of mortality and morbidity, contributing risk factors, recommendations, and gaps in knowledge/data. She utilized WHO definitions of perinatal and neonatal death. Perinatal death is defined as "death of a baby weighing at least 500 grams (or when weight is unavailable, after 22 weeks of gestation, or with a crown heel length of 25 centimeters or more) and up until the first seven days of life." Neonatal death is defined as "deaths of live born infants during the first 28 completed days of life; early neonatal deaths occur after birth and within seven days of life; late neonatal deaths are after the first seven days but before 28 completed days." As a proportion of infant mortality, neonatal death is 60 percent. The highest neonatal mortality and 1/3 of perinatal deaths are in south central Asia. Regions with the highest perinatal mortality have the lowest coverage of trained birth attendants at delivery.

According to WHO, the main causes of infant death are asphyxia related (25 percent), birth injuries, infections (42 percent), congenital anomalies (11 percent), and complications associated with prematurity and low birth weight. About 19 percent of all infants are born with a birth weight of less than 2,500 grams. The highest prevalence is in Asia (21 percent); Oceania is second at 20 percent. Studies have shown that low birth weight due to growth retardation is more common in developing countries than developed countries. There are many additional risk factors for perinatal and neonatal deaths which, while not well documented, are supported by some evidence. These include: hypothermia, failure to give colostrum in the first few days, not exclusively breastfeeding, mother with sexually transmitted infection (STI) during pregnancy and delivery,

poor or no maternal prenatal care, untrained birth attendant assisting, neglect or discriminatory care of female infants, lack of newborn care, and maternal death.

Ms. Moore emphasized that there are still many unanswered questions. Further investigation is especially needed in the areas of data collection, risk factors and appropriate interventions, and cost effective and feasible strategies to address harmful practices, effective essential-care packages, and key behaviors.

Participant discussion following Ms. Moore's presentation touched principally on three issues. The first was the question of age cut-off points. Ms. Moore emphasized her position that rejects age categorization. Early and late definitions can be very difficult; does it really make a difference if a baby dies on day seven or on day eight? Ms. Moore believes that it is better to think in terms of a continuum.

The second issue was that of under reporting of infant deaths and related cultural practices. In some countries, a child is not considered to exist until it survives a certain time period, so deaths that occur prior to this are not reported. One participant commented that there seemed to be a gender bias involved in this dynamic. Ms. Moore referred participants to a BASICS publication on deaths and gender.

Finally, participants discussed the high proportion of deaths due to the birth process and the related fact that many infants never reach a health facility; they die at home. Ms. Moore commented that not a lot of work has been done in this area, but that access to emergency care and trained birth attendants are key to saving these infants' lives.

NEONATAL MORTALITY/MORBIDITY

RECOMMENDATIONS

- Advocate to increase the general awareness of the scale and burden of neonatal mortality and morbidity, political awareness and commitment, and available resources.
- Improve the quality and availability of key data, including community-based, quantitative and qualitative data on best practices; death audits, and on-going vital registration for monitoring.
- Implement evidence-based practices such as essential newborn care in homes and health facilities, adequate prenatal, delivery, and post-natal care for all mothers; and trained birth attendants at all deliveries.
- Prevention, prevention, prevention is needed to save the lives of infants.

Indicators for Maternal and Newborn Programs
Cindy Stanton
MACRO International, Inc.

The objectives of Ms. Stanton's presentation were to discuss strategies for selecting appropriate maternal and newborn indicators for programming, and to brainstorm new ways to expand the use of existing data, based on collaboration with health facilities. She specifically emphasized the development and use of indicators at the local or health facility levels.

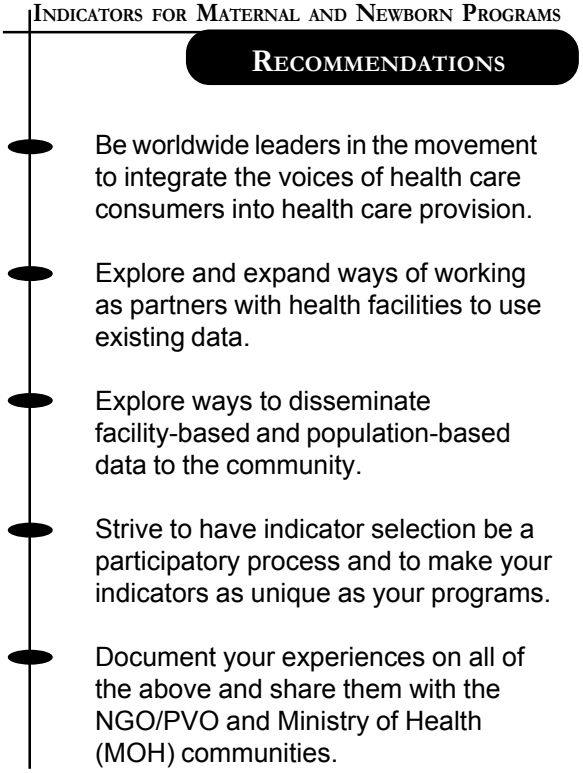
There are a number of publications to help determine indicators. One that is very helpful is a WHO publication, *Selecting Reproductive Health Indicators: A Guide for District Managers*. This document presents a seven step process to indicator development and selection, guiding the reader through steps to come up with one's own indicators. In so doing, it attempts to make selecting indicators a participatory activity in which the community is involved. Ms. Stanton reviewed this process and suggested that users keep their notes of the process as they are historical records of decisions made.

Ms. Stanton emphasized that we should try—to the extent possible—to use existing data systems for monitoring and evaluation purposes. Facility-based delivery room birth registers are one possible source of data. She noted several reasons to make better use of birth registers. They are a routine data source, they are everywhere, they contain a minimal set of data abstracted from other sources in a readily available format recorded in one place, and they can serve as a sampling frame to identify cases of interest if more detailed information is required. While there is wide variety in the items reported on birth registers, there appears to be some consistency. Items frequently reported include: mother's name and age, newborn outcome, gender, delivery method, birth weight, delivery attendant, and a medical record number. Other items recorded in registers include: admission date, delivery date, address/district, gestational age, referral, parity, maternal death, maternal complications, admission hour, and admission diagnosis or complication. Ms. Stanton reviewed sample birth registers from Indonesia, Colombia, and one developed by the Centro Latinoamericano de Perinatologia (CLAP), based in Uruguay. The latter is very complicated, containing over 200 variables. However, it serves as a national standard in many countries in Latin America. NGOs may want to pursue ways to collaborate with facilities using the CLAP form.

We should try to the extent possible to use existing data systems for monitoring and evaluation purposes.

Ms. Stanton also spoke briefly of maternal and perinatal death audits as a means of improving the quality of obstetric care. These audits are often facility-based but could also be done in the community. Instead of a traditional maternal/perinatal death audit wherein the case is reviewed by physicians to establish the order of events, where interventions should have occurred, and how a similar event could be avoided, Ms. Stanton proposed community involvement in an audit. A representative of the NGO community, a TBA, or other community spokespersons should partake in the audit. The objective of such an audit should be to establish social and facility factors for what happened, without blame, and to determine what could have possibly prevented the death. Together, those involved should develop a list of commitments to address the preventive measures. Ultimately, this type of audit creates a greater connection between communities and facilities.

Ms. Stanton also mentioned recent work being undertaken by the London School of Hygiene and Tropical Medicine and its collaborators, which looks at audits of "near miss" cases in which women almost died. Audits are generally done at the health facility level and enable the incorporation of the women's views on quality of care, thus ensuring a comprehensive assessment. These types of audits are less threatening to health providers and allow a more constructive approach that enables both quantitative and qualitative analysis of the determinants of quality of care. In discussion following Ms. Stanton's presentation, several participants commented on the usefulness of "near miss" audits to generate information that could be used in information, education, and communication (IEC) campaigns.



Innovative Field Programs
Jennifer Winestock Luna
PLAN International

Video: *"Safe Motherhood Strategies for Behavior Change in Community, Health Providers, and Decision Makers: The Bolivian Experience"*
Narrated by Veronica Kaune

Ms. Winestock Luna introduced a video and an accompanying slide show that featured Veronica Kaune, IEC Coordinator of The MotherCare II Project in Bolivia. Ms. Kaune presented the steps taken in the MotherCare Project to develop strategies to improve maternal and neonatal health at the national level. MotherCare I and II have been working in Bolivia since 1994.

The first step in the development of the national program was the community diagnosis process. Ms. Kaune presented the findings from this process: (1) low recognition of risks, (2) husband makes all decisions about what to do, (3) nonexistence of an emergency plan to access care, and (4) low health service utilization. In the second step, an assessment and analysis of behaviors was conducted, making note of "feasible behaviors" (i.e. behaviors that can be realistically adopted to improve health outcomes) among pregnant women, husbands, TBAs, health providers, and policy makers.

An audience study indicated that 63 percent of individuals in the catchment area had listened to the project's radio intervention activity; of these, 84 percent remembered information about pregnancy risk signs.

The third step employs six strategies: (1) develop obstetrical and neonatal complications management protocols, (2) train health providers in obstetrical and neonatal complications management for first and second level health care, (3) undertake safe motherhood IEC and counseling, (4) make mother and child friendly health services culturally appropriate, (5) involve the community in safe motherhood efforts, and (6) create national, regional and local safe motherhood committees. Progress on the implementation of these strategies is supervised, monitored and evaluated by the project. Regarding the IEC component, the project conducted an audience study that indicated that 63 percent of individuals in the catchment area had listened to the project's radio intervention activity; of these, 84 percent remembered information about pregnancy risk signs. An evaluation impact is currently being conducted.

After the presentation, Ms. Winestock Luna called on Colleen Conroy, deputy director of MotherCare to respond to questions. Ms. Conroy made the point that it takes time to conduct the necessary quantitative and qualitative research and then translate findings into a realistic project strategy. Substantial time was invested to conduct initial research including the baseline in five communities from 1994 to 1995. In 1995 and 1996, IEC materials were produced, including the video piloting and the integration of the IEC and training components. During the 1997-1998 implementation phase, the materials were disseminated and training conducted.

Health care providers were a difficult group to convince of the benefits of the project. They responded best when they were taken to observe the project in action and had an opportunity to talk to staff and observe results. The impact study is looking at the effect of the six components as well as costs and issues of sustainability. The Bolivian MOH has agreed to assume some of the costs of the dissemination of results.

RECOMMENDATIONS

- Conduct sound formative research with all parts of the system.
- Involve all parts of the system in strategy development.
- Conduct behavior analysis.
- Develop feasible strategies.
- Consider culture and education levels.
- Supervise, monitor, evaluate, and reassess.

Effectiveness of Screening Programs
Barbara Kinzie
Maternal and Neonatal Health Program/JHPIEGO

Ms. Kinzie opened her presentation with a definition of screening: "The testing of a group of apparently well persons for the purpose of detecting individuals with a high probability of having a disease or a potentially harmful condition. Screening is different than diagnosis; it is the prediction of a problem as distinguished from early detection of a problem. The effectiveness of a (risk) screening program is measured by its ability to discriminate between women of low and high risk."

However, case studies have shown that screening factors don't correlate with those who develop the complications and vice versa. Ms. Kinzie reviewed several case studies in which the predictive power of risk screening was poor: one in Kasango, Zaire where women were screened for the risk of developing complications; one where they were screened for relative risk of post-partum hemorrhage; and one where risk screening was done for pregnancy induced hypertension. Based on these findings, maintained Ms. Kinzie, every pregnant, delivering, or recently delivered woman is at risk for complications. Is there, then, any role for risk screening?

In general, risk screening should be used to diagnose, not to predict. However, there are some situations in which screening during antenatal care is useful: anemia, pregnancy induced hypertension, syphilis and other STIs, and HIV. She also suggested that antenatal care should focus on birth and emergency preparedness, provision of micronutrient supplements and tetanus toxoid, and detecting pregnancy-related complications and making the appropriate referrals.

In post-presentation discussion, one participant suggested that PVOs focus on the social and physical conditions that influence risk patterns, such as early marriage and distance from health services, because this is the information that is most lacking. Another participant suggested that it may be cost-effective to treat without screening depending upon the prevalence of conditions in a certain locale.

EFFECTIVENESS OF SCREENING PROGRAMS

RECOMMENDATIONS

- Do not burden clients or staff with screening that has no beneficial effect on pregnancy outcome.
- Know the prevalence of life-threatening conditions among the pregnant population in your catchment area.
- Screen to detect life-threatening conditions of significant prevalence in your area.
- Minimize time between detection and treatment.
- Ensure that all health workers, as well as the community, understand the consequences and management of the condition for which screening is conducted.

Epidemiology and Management of Malaria during Pregnancy

Monica Parise
U.S. Centers for Disease Control and Prevention

Dr. Parise emphasized that malaria in pregnant women is significant because it can lead to adverse consequences for both the mother and child. Most of the existing data relates to *Plasmodium falciparum*, though there appears to be emerging information that *P vivax* may also contribute to adverse maternal/fetal outcomes. When we consider the spectrum of malaria illness that occurs in pregnant women, we must distinguish between areas of high and low malaria transmission as malaria's effects depend on the degree of maternal immunity (and, thus, on the intensity of transmission).

In areas of low transmission, generally all pregnant women have low levels of immunity and therefore, women of all parities are at risk of malaria and its complications at any time during gestation. These complications include: severe malaria illness (high fevers, anemia, cerebral malaria, and death), abortions, stillbirths, and congenital malaria. In areas of high malaria transmission (e.g. much of sub-Saharan Africa), where women have acquired substantial malarial immunity, severe malarial illness is uncommon but placental infection, which is associated with low birth weight (LBW), can occur; primigravidae and secundigravidae are most affected. In both high and low transmission settings, malaria often contributes to anemia, which is also associated with LBW.

> Before beginning a program for prevention of malaria in pregnant women, it is useful to have a baseline evaluation of the impact of malaria during pregnancy in that geographical area and an assessment of how the intervention may fit into existing antenatal care services.

The main intervention for prevention of malaria during pregnancy has been the use of antimalarial drugs. Antimalarial drugs that are contraindicated during pregnancy include: tetracyclines and primaquine. Chloroquine (CG), quinine, pyrimethamine, proguanil, clindamycin, and sulfadoxine-pyrimethamine (SP) are safe. There is limited safety data on halofantrine, the artemisinin derivatives, and atovaquone. In low transmission areas, because women are symptomatic when they have parasitemia, the focus is on prompt recognition of illness and appropriate case management. In high transmission areas, because many women are asymptomatic, the intervention focus is on prevention, i.e. chemoprophylaxis or presumptive management—such as intermittent presumptive therapy (IPT). IPT with SP, one dose at the first antenatal clinic visit in the second trimester and a second dose in the third trimester, has been demonstrated to be safe, efficacious, easily deliverable, and cost-effective for the prevention of placental malaria in areas of high transmission.

Although it appears that HIV-seropositive women require more doses of SP (i.e. at least three) than HIV-seronegative women, this must be confirmed in other studies. The efficacy of IPT with CQ in areas where *P falciparum* remains sensitive to CQ is also under investigation.

Before beginning a program for prevention of malaria in pregnant women, it is useful to have a baseline evaluation of the impact of malaria during pregnancy in that geographical area and an assessment of how the intervention may fit into existing antenatal care services. The baseline evaluation of the extent of the problem, which is also useful for comparison purposes when one is evaluating program impact, includes: an assessment of prevalence of febrile illness, anemia, peripheral/placental parasitemia, and LBW in women in antenatal clinics and delivery units. The evaluation of the opportunities for intervention within the existing antenatal care system includes: an assessment of client- and facility-dependent factors to assess women's attitudes about malaria, antimalarial drugs during pregnancy, their use of antenatal care (especially timing and number of visits), and barriers to their use of services. The important data necessary to evaluate potential barriers related to use of health care facilities include: an assessment of current clinic policies and practices, interactions between health care workers and women, and availability of equipment, supplies, and drugs.

RECOMMENDATIONS

- Gather important baseline information prior to program implementation, including an assessment of the public health impact of the malaria in pregnant women (prevalence of parasitemia, anemia, LBW, etc.) and the opportunities to intervene within the existing antenatal care system.
- Use two-dose IPT and SP to prevent placental malaria in areas of high malaria transmission where P falciparum is not resistant to SP.
- Use the drug of choice for treatment of uncomplicated malaria during pregnancy: CQ is the drug of choice for non-falciparum malaria or for P falciparum in areas without CQ-resistance; for treatment of P falciparum in areas with CQ-resistance, efficacious drugs include SP, quinine/SP, quinine/clindamycin, or quinine alone. If the malaria species is not known, treatment must be directed against P falciparum.
- Treat complicated malaria with parenteral quinine (with or without SP or clindamycin).

Increasing Tetanus Coverage
Gail Montano
Project Concern International

Ms. Montano addressed the improvement of maternal health in Indonesia, where Project Concern International (PCI) has worked since 1972, focusing on strengthening and expanding government and NGO health services. Because of its unique geographic makeup of thousands of islands on several large archipelagos, many of the health problems in Indonesia are related to transportation and communication difficulties. Additionally, the population is diverse religiously, linguistically, and culturally—all factors that create barriers to effective health services.

It is estimated that 43 percent of the population have no access to health care.

In one of PCI's project areas, Irian Jaya, the maternal mortality ratio is approximately 650/100,000; principal causes include hemorrhage, obstructed labor, and infection. It is estimated that 43 percent of the population have no access to health care, and there is an absence of traditional birth attendants (TBAs).

Ms. Montano highlighted two PCI approaches to enhancing child survival and maternal health program effectiveness. The first focused on promoting health behaviors and increasing demand for health services through a school-based primary health care education project, or School Posyandu. The project worked with children to promote behavior change in the community and the family. For example, school children received rewards for encouraging family participation at clinics, homework assignments dealt with health issues, and students conducted health surveys. Teachers received special health training and provided moral support by recognizing children with rewards and prizes. The school clinic provided nutrition, family planning, oral rehydration solution (ORS), and tetanus toxoid immunization (TT), among other services.

The results from this child survival project suggest the powerful role children can play in promoting behavior change. Immunization rates increased from 16 percent to 47 percent. The percentage of women that used trained health workers for delivery increased from 30 percent to 63 percent; 94 percent of these women received postnatal follow-up care. Knowledge, attitude, and practice (KAP) survey results showed increased knowledge of nutritional habits to prevent anemia and night blindness.

PCI is also working on a more challenging approach to expand and increase the acceptability and role of midwives. Through its CSXI project, the MOH recruits and trains village midwives. PCI's role is to strengthen technical knowledge as well as community acceptance of these new type of health providers. Training focuses on midwives' understanding of local cultural practices, local language acquisition, and broadening knowledge of health issues. The project has expanded the midwives' role to provide basic obstetrical care as well as broader family health services, including recognition and treatment of diarrheal

While still facing obstacles to acceptance, support for midwives provided by PCI has led to their increased acceptance among the communities they serve.

diseases, provision of ORS, diagnosis and referral for pneumonia, and promotion of immunizations and breastfeeding. While still facing obstacles to acceptance, support for midwives provided by PCI has led to their increased acceptance among the communities they serve.

To secure and maintain the support of government entities for the expansion of the role of the village midwife, PCI developed IEC strategies and worked closely with the MOH at both provincial and district levels to promote coordination of efforts. PCI also conducted workshops to motivate government staff to work with midwives. The Ministry of Education (MOE) has demonstrated its support for the school project.

Many challenges remain, among them the replicability of child survival interventions within the context of the current economic crisis in Indonesia. The rigid social structure hasn't allowed women to make health-related decisions, and cultural barriers will continue to be a major obstacle for universal acceptance of newly established midwives.

INCREASING TETANUS COVERAGE

RECOMMENDATIONS

- PVOs should recognize and promote the role of school-age children in health promotion and specific IEC strategies and campaigns.
- School teachers and the MOE, while often overlooked, can play important roles in the dissemination of health knowledge and can impact health behavior.
- When "scaling up" child survival interventions, PVOs need to consider potential differences in applicability of strategies. (In this case, IEC strategies that worked to promote TT coverage in one set of islands of Indonesia, were not considered effective strategies in another geographic cluster. Maluku province had a higher literacy rate and identified well with TT cards and posters, whereas populations in Irian Jaya were less motivated by utilization of TT cards or placement of posters in health clinics to promote TT.)

Pragmatic Programming for Maternal Anemia
Leslie Elder
The MotherCare Project/John Snow, Incorporated

High prevalence levels of iron deficiency and anemia remain stubborn fixtures on the global maternal health scorecard despite decades of clinical research and periodic calls to action during international gatherings of national leaders and health policy makers. It is estimated that over two billion people worldwide are iron deficient and approximately one billion of them suffer from anemia. Among pregnant women in South Asia, anemia prevalence is estimated to be as high as 79 percent; by extrapolation, nearly all pregnant women in South Asia are iron deficient. Similarly, a majority of pregnant women in much of Africa also suffer from iron deficiency.

It is estimated that over two billion people worldwide are iron deficient and approximately one billion of them suffer from anemia.

Conflicting recommendations in the scientific literature regarding strategies for intervention, combined with little evidence of sustained impact from scaled up programs, complicate the situation for program planners seeking to design and implement anemia control components of maternal and newborn services.

Ms. Elder briefly reviewed the basics of maternal anemia including the determinants and functional consequences of iron deficiency and anemia for pregnant women and their children. Secondly, as a technical update, she discussed one of the more recent areas of controversy for anemia control—the optimal iron supplementation dosing schedule during pregnancy. Thirdly, she highlighted several examples of innovative community-based approaches that The MotherCare Project has implemented to address some of the more persistent barriers to success with iron supplementation programs for pregnant women.

Determinants of anemia include: iron deficiency due to inadequate, bioavailable dietary iron intake; increased blood loss due to parasitic infections such as hookworm or urinary schistosomiasis; infections such as malaria, HIV and Acquired Immunodeficiency Syndrome (AIDS); other micronutrient deficiencies including folate, Vitamin A, and B12, and genetic disorders such as thalassemia and sickle-cell disease.

Anemia contributes to increased risk of poor pregnancy outcomes including preterm delivery, low birth weight, increased perinatal mortality, and the possibility of impaired cognitive development for the child.

The need for intervention is clear, according to Ms. Elder. Anemia contributes to increased risk of poor pregnancy outcomes including preterm delivery, low birth weight, increased perinatal mortality, and the possibility of impaired cognitive development for the child. Severe anemia heightens the risk of maternal mortality and obstetrical complications. Anemic mothers have decreased resistance to infection and decreased work capacity, as well as the possibility of impaired care-giving capacity.

The failure to translate the success of efficacious but small daily iron supplementation trials to large scale effectiveness in supplementation programs led some researchers in the mid-1990s to look for alternative strategies. An intermittent (usually once weekly) iron supplement dosing regimen has been the focus of several laboratory and community-based field trials for a

variety of target populations. Proposed advantages of intermittent supplementation include: lower costs, the possibility of reduced side effects from the iron tablets, and the potential for increased effectiveness of IEC activities (e.g., campaign style weekly "iron days") for anemia control. However, many of the persistent stumbling blocks to any supplementation program remain (for example, the availability of high quality iron tablets, women's access and utilization of health services, and the need for adequate counseling and support by health care providers). In addition, a prime concern raised in the ongoing debate in the scientific literature is the efficacy of the modified dosing regimen for pregnant women.

One of the most recent contributions to the public discussions is a synopsis of a meta-analysis of iron supplementation studies released at the March, 1999, International Nutritional Anemia Consultative Group (INACG) meeting entitled, "Summary of major findings on the efficacy of intermittent iron supplementation" by G. Beaton, G. McCabe, R. Yip, and S. Zlotkin. The full report is expected sometime this year. For pregnant women, the synopsis concluded that: "There is abundant evidence that direct supplementation programs in pregnancy, with few exceptions, have very limited effectiveness. The present analyses offer no reason whatsoever to suggest that weekly supplementation should be expected to be any more effective. In our judgment, it would be unwise, and perhaps detrimental, to replace daily supplementation approaches with weekly supplementation during pregnancy. [...] Regardless of the degree of supervision that can be arranged, weekly, instead of daily, iron administration is not recommended for pregnancy."

Ms. Elder then shared MotherCare's experience with anemia control in Indonesia. The project developed an innovative approach to address the problem of anemia prevalence of 45.2 percent among pregnant women in three intervention districts. Expanding beyond the traditional health system, the project staff and the MOH created a partnership with the pharmaceutical industry for production of low cost iron folic acid (IFA) tablets while working simultaneously to increase iron supplement sales outlets.

Expanding beyond the traditional health system, the project staff and the MOH created a partnership with the pharmaceutical industry for production of low cost iron folic acid (IFA) tablets while working simultaneously to increase iron supplement sales outlets.

MotherCare and the MOH also reached across traditional public sector boundaries to work with the Ministry of Religious Affairs' marriage registration program. When couples present at the Ministry office, a Religious Affairs official counsels them on anemia and the importance of IFA tablet consumption prior to the first pregnancy, advising them where to purchase iron supplements and distributing information pamphlets and reminder calendars for the new brides. The baseline anemia prevalence among the study population was 23.8 percent; after one month, it had been reduced to 14.2 percent.

In the wake of the economic crisis in Indonesia, MotherCare was also able to provide support to the implementation of a longer-term strategy for addressing iron deficiency among women and children through provision of an iron premix to fortify the wheat supply for the country.

In discussion following the presentation, one participant asked Ms. Elder to respond to a comment made at the micronutrient conference last year—that iron supplementation has no impact on birth outcomes. Ms. Elder responded that there is a body of research that provides evidence for an association between anemia in pregnant women and a higher risk of negative outcomes such as premature birth (for example, Scholl et al., 1992) and low birth weight (Garn et al., 1981). Convincing evidence of improved birth outcomes among women receiving iron supplementation during pregnancy comes from a recent randomized, double-blinded, placebo-controlled trial among 197 pregnant women in Niger by Preziosi, et al. (1997). Mean length and Apgar scores of infants were significantly higher among women receiving iron supplements, and there was a significant reduction in fetal and early neonatal death rates for supplemented women, although the authors of the study cautioned against over interpretation of the link between maternal iron deficiency and fetal/newborn mortality due to small sample size.

There was some follow-on discussion of the role that study design (often observational in nature) has played in the controversy surrounding the advisability and/or justification of iron deficiency and anemia control programs.

RECOMMENDATIONS

- Use the recent 1998 INACG/WHO/UNICEF guidelines for best practice policy on the design of maternal anemia prevention and control programs (*Guideline for the Use of Iron Supplements to Prevent and Treat Iron Deficiency Anemia*). They advise that pregnant women in nearly all contexts take an IFA supplement on a daily basis for six months during pregnancy.
- Work with communities and the private sector, and reach across traditional public sector boundaries to expand services and iron supplement supply outlets beyond the established health system.
- Be opportunistic—take advantage of any opening to address iron deficiency and anemia in maternal health and other types of programs, including "less than perfect" strategies.
- Place supplementation strategies in the context of long-term behavior change for women clients, their families, and health service providers.
- Support operations research to identify, refine, and strengthen programs that are able to effectively improve and sustain women's iron status during pregnancy and throughout their life cycle.

Vitamin A Supplementation
Parul Christian
Johns Hopkins School of Hygiene and Public Health

Dr. Christian discussed Vitamin A supplementation as one of the effective strategies for promoting quality maternal and newborn care. She described a study undertaken in Sarlahi, Nepal, in the south east central plains region. Thirty village development communities, involving 270 wards, were selected to partake of the study.

In this area, night blindness (XN) normally sets-in late in pregnancy and if untreated, disappears soon after birth. It may reappear during lactation, however, its prevalence is lower. An ethnographic study of XN was conducted with pregnant women to understand women's perceptions of symptoms and treatment. Subsequently, a case-control study was conducted which showed that night blind women suffer more from health and nutritional risk factors than women without night blindness; lower weight, height, etc. They are also more likely to suffer illness either while suffering XN or several weeks before XN. XN is chronic and likely to repeat in subsequent pregnancies. Some of the other risks associated with XN in Nepal are an increase in urinary or reproductive tract infections, diarrhoea, and dysentery. Vitamin A deficiency could also lead to increased morbidity and mortality from infections. A study was undertaken to assess the impact on pregnancy-related mortality of supplementing women of reproductive age each week with a recommended dietary allowance of Vitamin A, either preformed or as ß carotene.

The project began by mapping every single household in the study area to identify married women (44,626); of the total women recruited, 20,000 contributed at least one pregnancy to the study. Women were randomly divided into three groups of 90 wards each; women in each ward were given either the placebo, Vitamin A supplements, or ß carotene supplements for over three and one half years. Rosters were completed; pregnant women were interviewed twice. Women in a sub-sample had blood drawn to be tested for retinol and carotenoid concentration.

Currently, studies are underway in Nepal examining the impact of other micronutrients such as zinc, iron, folate, and a multi-nutrient prenatal supplementation on preterm deliveries, birth weight, and early infant mortality.

Nine million supplements were donated by the pharmaceutical company Roche. They were coded and labeled before going to the field, where 432 local women were hired on a part-time basis to deliver them once/week. The results of the research showed that mortality related to pregnancy was reduced by 40 percent with Vitamin A supplementation and reduced 49 percent with ß carotene supplementation. Both treatments combined resulted in a reduction of 44 percent. The protective impact was established after one and one half years of supplementation. Women with XN in the Vitamin A and ß carotene groups had lower risk of mortality compared with the placebo group.

Discussion following Dr. Christian's presentation focused on the study's findings about the comparative benefits of Vitamin A supplementation and supplementation with ß carotene. The benefits of ß carotene supplements are found in the potential antioxidant role they play. Neither Vitamin A nor ß carotene supplementation had an impact on birth weight or infant mortality. Currently, studies are underway in Nepal examining the impact of other micro nutrients such as zinc, iron, folate, and a multi-nutrient prenatal supplementation on preterm deliveries, birth weight, and early infant mortality. There are also plans for at least three more trials in three different regions with varying levels of XN and iron deficiency in women over the next three to four years. Dr. Christian also commented on a question about Vitamin A studies done in children that showed poor correlation between a reduction in child mortality and serum retinol concentrations. Unfortunately, the Nepal study did not perform a stratified analysis (as serum retinol levels were available in a small sub-sample of women) and so was unable to confirm or invalidate this relationship.

VITAMIN A SUPPLEMENTATION

RECOMMENDATIONS

- Raise the intakes of preformed Vitamin A or provitamin A carotenoids to normal recommended dietary levels among pregnant and lactating women; this may result in an improvement in their health and survival.
- Identify women with current or a previous history of night blindness. Maternal night blindness is a marker of poor health and survival, so this may identify women at high risk and in need of health and nutritional care.
- Obtain a current or previous history of night blindness in pregnant women during an antenatal visit.
- Target women with night blindness to receive Vitamin A as per WHO recommendation. These women should also receive iron-folate supplements as well as dietary counseling and health care during and after pregnancy.
- Target families and communities of night blind women and xerophthalmic children for prevention and control of Vitamin A deficiency as Vitamin A deficiency clusters in families and communities.

TBA Roles in Maternal and Newborn Care

Debbie Armbruster
American College of Nurse-Midwives

Ms. Armbruster sought to define the who and what of TBAs, clarify the purpose of TBA training, and reflect on the disconnect between the roles assigned TBAs to improve the health of women and children and/or to reduce maternal mortality. TBAs are trained to improve health, yet there is an expectation that they will reduce mortality. This disconnect has implications for the content of TBA training and for TBAs' role(s) in the community.

TBA training focuses on preventive and hygienic care and clean health practices, such as hand washing, immunizations, breastfeeding, and nutrition counseling. Ms. Armbruster presented the table of contents from the *"Training Manual for Traditional Birth Attendants*," in which nothing related to reducing maternal mortality is evident.

However, the Safe Motherhood Initiative (Nairobi Conference, 1987) emphasized TBAs' role in reducing maternal mortality. The objectives for this type of TBA practice differ substantially from those focusing on improving health, emphasizing, for example, curative-type skills such as resuscitation of infants and the use of antibiotics to prevent infection.

Ms. Armbruster reviewed a number of studies of TBA practices in various countries and related health outcomes. In so doing, she led participants through an exercise of reflecting on the connection between the role of TBAs in a specific community context, the necessary training, the cost-effectiveness of this relationship, and the implications for other levels of health care.

TBA ROLES IN MATERNAL AND NEWBORN CARE

RECOMMENDATIONS

- Review the demographic characteristics of a setting.
- Determine the extent of the problems surrounding maternal and neonatal health.
- Determine the objectives of a TBA training program or of training TBAs.
- Recognize the critical importance of linkages and ensure that any TBA program has effective and supportive linkages to the health system.
- Collaborate with other groups involved in safe motherhood to improve the skills of providers and upgrade facilities.
- Evaluate the cost, cost-effectiveness, and/or cost benefit of TBA training.
- Review and, if necessary, revise this approach based on the above findings.

Community Partnerships for Safe Motherhood:
Home Based Lifesaving Skills
Lynn Sibley
American College of Nurse-Midwives/PRIME

Ms. Sibley shared an innovative strategy designed to reduce maternal and neonatal mortality in Maitha Block, Kanpur Dehat District in India. Maitha Block is in the north Indian State of Uttar Pradesh where 88 percent of births occur in private homes and over half of births are unattended by trained health care personnel. India is host to other worrisome indicators: 21 percent of global annual maternal mortality occurs in India and over two million newborns die each year.

There are many factors that contribute to maternal and neonatal death; they are complex and hence demand innovative interventions. Among these are factors such as the unpredictability of life-threatening complications and lack of skills to handle them, social and cultural influences on problem recognition and decision-making, inadequacies of the health system, and economic and geographic barriers to health care.

The goal of the Community Partnerships for Safe Motherhood is to reduce maternal and newborn deaths by increasing access to life saving measures in the home, reducing delays in transport to referral facilities, and promoting post-partum and post-abortion family planning. The strategy involves the community in planning, implementing and evaluating the effort, and relies on local resources. Training in home-based life saving skills, safe motherhood, communications, emergency transportation, and mortality monitoring interventions focus on the main causes and time of death, problem prevention and recognition, first aid responses, decision-making, referral, and post-partum and post-abortion family planning.

The goal is to reduce maternal and newborn deaths by increasing access to life saving measures in the home, reducing delays in transport to referral facilities, and promoting post-partum and post-abortion family planning.

The project design phased in activities over a three-year time period. In year one, baseline and diagnostic assessments were made of the referral facilities (Referral Facility Survey completed in September 1998), of the communities in eight villages and 25 hamlets involved in the project (Community Self-Assessment to be completed in June 1999)), and of morbidity and response (Morbidity and Performance Assessment to be completed in November 1999). A team of eleven project people, eight of whom were community facilitators, undertook the assessments employing a variety of methods. Planning will be done based on these assessments. In the project's second year, two complementary training interventions in home-based, life saving skills are envisioned. One is to be taught by resident community trainers and is for pregnant women, their family care givers, and home birth attendants—be they traditional or non-traditional. This will be supplemented by a TBA training at a public sector referral facility by referral center staff and is for active home birth attendants. The training interventions will be reinforced by putting in place a safe motherhood communications system, an emergency transportation system, and a simple mortality monitoring system. In year three, implementation and documention are planned.

Expected outcomes of the project are: improved response of women, care givers and home birth attendants—the home birth team, community support for activities using local resources, an implementation manual, replication of the community-based model, and a contribution to safe motherhood and child survival through reductions in morbidity and mortality.

RECOMMENDATIONS

- Assess not only medical causes of death but also contributing factors in order to tailor program interventions to local settings where home birth is common and mortality is high.
- Reach key players in a birth or abortion-related event through a variety of mutually reinforcing means. These persons must participate if community level interventions are going to be effective.
- Come to a common understanding of problems and their solutions to improve the chances of behavior change. This is particularly important in training of traditional or lay providers where concepts and practices may be quite different from modern (biomedical) concepts and practices.
- Seek solutions that are both safe (will not cause harm), effective (will make a difference), and acceptable (will be allowed in the home, i.e. actually practiced).
- Document and evaluate! This has been one of the main problems with TBA training. We have little to show for the numbers of TBAs who have been trained over the last decade. Information is needed for sound policy making—to train or not to train—and most importantly in what to train and how to best train.

Components of Basic/Comprehensive Emergency Obstetric Care
Dr. France Donnay
United Nations Population Fund

The need to look at the district level as the central unit of health programming and the three levels of care—household, community, and district—as a system was the underlying proposal of Dr. Donnay's presentation. This need arises from the fact that 100 percent of women should have maternity care that encompasses antenatal care, clean and safe delivery, postnatal care, and family planning. Additionally, 15 percent of women need Emergency Obstetric Care (EOC), and between two and five percent require a Caesarean section.

Within a systems approach, each level of care holds certain responsibilities that should complement those at the other levels. Community-level care is responsible for education, mobilization, and first aid EOC. While stabilizing a woman with first aid EOC, community care-givers must simultaneously seek additional assistance. At the health center, clients should expect to receive basic EOC. The district hospital is responsible for comprehensive EOC as well as basic EOC.

For example, in the management of complications in pregnancy and delivery, community-level care should include clean deliveries by professional midwives, prompt recognition of complications and referral, a communication strategy for awareness and demand creation, and community financing schemes for transport and access to care. In the case of the latter, in Mali a rapid response system was created through dialogue and consensus among the Government of Mali, development agencies, health professionals, local authorities, and villagers. Through a cost-sharing and pay-later arrangement involving patients, village health associations, and district health authorities, access to emergency care is guaranteed. The timely repayment rate is in the high nineties.

Emergency Obstetric Care Costs in Bangladesh by District

Items	Annual Cost per District in US $
Capital Costs (annualized) (includes equipment at 53% of annual capital costs; materials at 8%; training at 33%; and repairs at 6%)	$ 49,675
Annual Recurrent Costs (includes drugs at 75% of recurrent costs; IEC at 17%; Research/ Evaluation at 5%; and Training: Support at 3%)	$ 89,618
Total Annual Cost per District	**$139,293**

At the health center or private maternity home, skilled professionals with the ability to promptly recognize major complications should be available around the clock. At the district hospital, emergency management requires the 24 hour availability of professionals skilled in obstetric procedures and the necessary support infrastructure (facilities, supplies, equipment, drugs, blood supply, effective transport options).

Cost need not be a barrier to EOC, even to comprehensive EOC. In Bangladesh, where access to obstetric care was very limited, a project aimed at reducing maternal mortality and improving women's access to care by upgrading and decentralizing EOC at all levels of care was undertaken. When costing-out EOC at the district level, it totaled approximately US $140,000 annually.

The inability to pay for health services has ceased to be a barrier to care in Bolivia. Co-financed by the central government and municipal councils, the National Insurance for Maternity and Childhood Programme was established following a cost analysis study. For pregnant women, coverage includes four prenatal visits, hospital delivery, treatment for complications, and one post-partum visit. Children under five are covered for treatment of diarrhoeal disease and respiratory infections, both major child-killers in Bolivia. Preliminary evaluation results indicated an increase of 80 percent in prenatal attention, 48 percent in hospital deliveries, and 90 percent in treatment of emergency cases.

In discussion following the presentation, a participant asked Dr. Donnay to estimate a range or percent of maternal mortality that could be reduced at first level EOC at basic health facilities in situations where EOC is neither accessible nor available. To reduce maternal mortality in situations where comprehensive EOC is neither accessible nor available, we have to put into place health and nutrition interventions along with basic and comprehensive EOC. These interventions are not technologically difficult nor are they expensive. We must be cognizant of the big picture; we need to institute the whole package.

Discussion also emphasized the role of PVOs and NGOs as advocates. Dr. Donnay challenged the PVO and NGO representatives participating in the workshop: "By the year 2000, 80 percent of births should be attended by skilled providers. Can PVOs/NGOs have an advocacy role here? We have to speak with one voice to national and local governments, multi-laterals, and even the private sector."

Components of Basic/Comprehensive EOC

Recommendations

- Be women-friendly.
- Make health services accessible.
- Respect technical standards.
- Motivate and support staff.
- Empower and satisfy users.

Outcomes of Clean Birth Kits

Barbara Crook
Program for Appropriate Technology in Health

Tetanus and sepsis are among the leading causes of maternal and neonatal death and illness in developing countries. These infections occur mainly as a result of contamination from an unclean environment and from harmful delivery practices, including the use of unclean materials during the delivery. Both mother and baby are exposed to the risk of infection. The high rate of home deliveries, of births attended by people with little or no training in hygienic delivery practices, and of shortages of suitable clean implements and materials all contribute to the problem of perinatal infection.

Several years ago, UNICEF and members of the Save the Children alliance were dialoging about infant mortality and neonatal death in Nepal. They expressed interest in a delivery kit to deal with cord infection, which seemed to be part of the problem. USAID provided funding to address this problem.

As a first step, quality research was done to ascertain current delivery practices. It is estimated that only 10.1 percent of births in Nepal are attended by a health professional. A recent impact evaluation of trained TBAs in Nepal found that among women living in districts with a TBA program who delivered between September 1995 and October 1996, 20.8 percent used a trained TBA for delivery and 27.2 percent used a trained TBA for cord cutting and care. According to the 1996 Family Health Survey, the perinatal morality rate is about 57 per 1,000 live births plus stillbirths. Neonatal mortality (of which infection is a major cause) is estimated at 49.9/1,000 live births, accounting for two-thirds of the total infant mortality.

Based on these findings, a clean delivery kit was designed. It was intended to ensure "three cleans:" clean cord cutting, clean delivery surface, and clean hands. It has three main components: a coin-size plastic disk to serve as a cord cutting surface and three cord ties, a plastic sheet to be used as a birthing surface, and a bar of soap. An additional, and most significant component, was an instructional pictorial insert written for low-literate people.

Tetanus and sepsis are among the leading causes of maternal and neonatal death; they occur mainly as a result of contamination from an unclean environment and from harmful delivery practices, including the use of unclean materials during the delivery.

Qualitative research asked people how much they would be willing to pay for such a kit; the most common answer was a price equivalent to a package of cigarettes. This determined the cost of the kit and therefore, its contents. The kit was developed to be sold commercially. Market research was done at bazaars; merchants were asked if they would be willing to sell the kits. They agreed. The question remained, how to promote it?

A promotional campaign used many different means, materials, and media. To promote and distribute the kit, women were given the kits in their seventh month of pregnancy. Orientations for TBAs to the kit were held at the district health office. A promotional kit, including a giant cardboard model was made, secured atop a van, and a local salesman was hired to sing its praises as it traveled the region. This "show" attracted a lot of attention. In fact, the box was stolen. Advertisement-like wall paintings, posters, and dangling promotion pieces were done.

The kit was successful and many more than expected were sold; to date over 450,000 have been sold in Nepal. Retailers loved it. At the close of the project, two of the women on staff at Save the Children/US formed their own private women's organization to produce and sell the kit. To make up for the low profit margin, they developed other materials to sell to NGOs. However, to make it self-sustaining, attempts are being made to convince TBAs and mothers to use the kit. The United Nations Population Fund (UNFPA) and UNICEF have bought and distributed many kits, but these are free and this has complications— knowing that TBAs get the kits free of charge, mothers don't want to pay.

Several years later an evaluation was conducted with funding from the Healthtech Project. The study design involved four cohorts of women— both kit users and non-users, interviewed within seven to 28 days after giving birth—to collect information on newborn health status during the first few weeks of life; reported delivery practices; and mother's knowledge, experience, and intentions. Results are not yet final.

Recently, a delivery kit workshop was held in Africa to share experiences. Representatives from six countries were present, including UNFPA/Mali. Participants saw a wide variety of kits with many different components and price ranges. The outcome of the meeting emphasized the tremendous need for appropriate, sustainable kits.

Discussion following Ms. Crook's presentation clarified some information, such as the cost of the kit and its markup, touched on advocacy, and the replicability of the kits. Kits were initially distributed through Catholic Relief Services as part of a USAID social marketing contract and sold for 18 cents per kit; retailers marked them up to between 20 and 22 cents per kit. Participants also discussed the question of securing the support of the public sector for projects such as the kit. Ms. Crook commented that the kit's use of locally developed and produced items was key to securing the support of the MOH, which in 1994, agreed to officially recommend the kit. This endorsement is printed on the kit's box. The MOH also sat on the advisory committee together with NGO representatives involved in health. The project also involved the public sector by utilizing the opportunity presented by monthly TBA trainings at the district level to orient and train TBAs in kit use.

Finally, Ms. Crook shared information about a similar effort in Burundi, where a local health facility developed a kit used in the hospital. Women bought the kit, and the money earned went into a revolving fund. This project established the need for resource-poor medical facilities to get small, simple, defined kits.

Outcomes of Clean Birth Kits

Recommendations

- Know your target audience: take the time to conduct qualitative research.
- Become familiar with the knowledge, attitudes, and practices of your target audiences.
- Do not assume you are an expert. Explore, explore, explore.
- Listen to the experience of others; there are practical, historical, and spiritual reasons underlying why people do what they do.
- Implement with respect.
- Understand how your project fits within the big picture.
- See your project from your target audience's perspective.

Innovative PVO Programs
Elizabeth Arteaga
Safe Motherhood/Bolivia

The WARMI (Quechua for "woman") Project sought to demonstrate what can be done to reduce maternal and neonatal mortality at the community level. This participatory and gender sensitive project was developed in Bolivia by Save the Children and The MotherCare Project (USAID). The four stages of the WARMI model (community action cycle) include: (1) community diagnosis of the problem, (2) community planning of activities to address the problem(s), (3) implementation of the action plan, and (4) group evaluation of results and further action planning.

The first phase of the project (1990-1994) occurred in the remote province of Inquisivi, an area in which Save the Children had been operating for several years. In this phase, the project implemented its methodology of community autodiagnosis, action planning, and participatory evaluation of results. This project began with a case control study that identified the probable causes of perinatal and maternal mortality. Next, project staff worked with women's groups and other community organizations to strengthen skills in identifying and prioritizing problems and to develop community-based action plans to combat problems and improve maternal and neonatal health outcomes. They also trained community members in safe birthing techniques and in preparation for obstetric emergencies.

This study demonstrated that community organizations can improve maternal and newborn health in rural areas. At the end of the period, perinatal mortality had decreased by 46 percent. There was a significant increase in the number of women participating in women's organizations as well as in the number of organizations. The proportion of women receiving prenatal care and initiating breastfeeding right after birth was also significantly higher. Likewise, women who received two or more doses of tetanus toxoid increased (48 percent to 85 percent), as did the number of births attended by midwives (13 percent to 36 percent). Contraceptive prevalence rose from 1.2 percent to 27 percent during the project period.

This study demonstrated that community organization can improve maternal and newborn health in rural areas. At the end of the period, perinatal mortality had decreased by 46 percent.

The second phase of the WARMI project began in 1995. The objective was to improve maternal and neonatal health at the national and regional levels through replication of the WARMI model in rural Bolivia. This is being done through the provision of training and technical assistance to the MOH and NGOs that are major service providers in rural areas. This phase of the project is targeting 513 communities with approximately 200,000 women.

During participant discussion, Ms. Arteaga commented that participation in the WARMI methodology has proved very empowering for rural women. Many have gone on to political positions in their communities and regions. They have also asserted their rights with partners and in demanding better services from the health centers. They managed to get some uncooperative doctors removed from the health centers. In addition to identifying problems, the autodiagnosis methodology is seen as a process that elevates women's self esteem.

Strengthening the Referral System
Susan Rae Ross
Cooperative Assistance and Relief Everywhere

In order to identify the necessary components of a referral system, Ms. Ross led participants through an exercise specifying the specific barriers to accessing obstetric services. She then discussed the "The Delay Model," which articulates these barriers through four delays: (1) delay in recognizing danger signs indicating a complication (knowledge), (2) delay in deciding to seek care for the complication (decision-making), (3) delay in reaching an appropriate health care facility to treat the complication (transportation, funding), and (4) delay in receiving (quality) treatment at the health facility (lack of staff or equipment).

Each of these delays indicates a gap in a health care continuum between care at the community level and care at the level of the health facility. The first three delays are experienced at the community level. Some of the factors contributing to these delays include: traditional beliefs about what is normal during childbirth, low knowledge about danger signs and risks, high rates of home births unattended by skilled providers, lack of transportation, lack of resources, lack of respect for TBAs, and the perception that hospitals are death traps. The fourth delay, that of receiving (quality) treatment, is experienced at the health facility. Some of the factors causing this delay are limited understanding of traditional practices, low value placed on counseling skills, families banned from the delivery room, high costs, and ill-equipped facilities to provide quality services.

INNOVATIVE PVO PROGRAMS

RECOMMENDATIONS

- Use participatory processes even though they are time intensive and consuming.
- Be aware that the educational process is long and complex.
- Make sure that trainers follow up promptly.
- Pay careful attention to social and cultural factors.
- Be prepared for a demand for immediate information and services created by the WARMI method.

To ameliorate these delays, which cost lives, we have to bridge the gap between the community and health institutions. Technically, however, even if we resolve these delays at each end of the continuum, we might still not bridge the gap; the key is bringing the community and health institutions together. Interventions that could accomplish this goal and contribute to bridging the gap—eliminating delays—and enhancing the quality of and access to care, include: dialogue, community empowerment, building closer relationships between TBAs and health centers, and establishing stakeholder committees.

Another lens through which to see the gap between the community and health facility is the concept of demand and supply. The community needs access (demand) to health services (supply). There may be ways to bring the demand nearer to the supply. Among these are obstetric first aid, functional transport, and rapid identification of danger signs and referral. Likewise, there are interventions that will deliver the supply of health services closer to the demand of the community. These include: outreach, basic EOC, appreciation of traditional practices, involvement of TBAs and family members, and good counseling skills. Both types of interventions promote healthy outcomes. As stated previously, the issue becomes one of bringing together the community and the health facility in a dialogue about their mutual concerns to enhance the quality of and improve access to needed health services.

Ms. Ross closed by identifying programming areas that contribute to reducing maternal and neonatal mortality: information (behavior change and communication) about danger signs for mothers/newborns, birth planning, clean births, community support systems/referral, access to obstetrical care services with skilled providers, post-partum care, and newborn care.

STRENGTHENING THE REFERRAL SYSTEM

RECOMMENDATIONS

- Create a forum for open dialogue between the community and the health system to effectively address the barriers that restrict women's access to quality health care.
- Improve health providers' understanding of and respect for traditional/cultural birthing practices that enrich the woman's birthing experience.
- Use mechanisms that promote joint problem solving, such as stake holder committees, to enhance the provision and utilization of services.
- Enhance the accountability and quality of services through greater community ownership of and responsibility for health care services.

Essential Newborn Care
Marge Koblinsky
The MotherCare Project/John Snow, Incorporated

Dr. Koblinsky focused on key elements in newborn care and also used the WARMI project as an example of what can be done at the community level to improve newborn care.

In the area of newborn health, a priority period of concern is the perinatal period; much infant death occurs around the time of labor and delivery.

In the area of newborn health, a priority period of concern is the perinatal period; much infant death occurs around the time of labor and delivery. The neonatal period of the first seven days is a very vulnerable period accounting for 62 percent of all infant mortality with birth-related infections being the greatest cause of neonatal death (28 percent). Another cause is asphyxia (21-25 percent), which also relates to birth practices. These are general statistics for developing countries. It is important to know what is happening in a specific country in order to accurately determine causes of neonatal and perinatal mortality.

One of the problems in trying to improve newborn care is identification of danger signs and teaching these to mothers. For example, how can mothers and families identify a low birth weight baby? Some studies are being done by Brian McCarthy, et al, at the U.S. Centers for Disease Control and Prevention (CDC) to identify easy methods. For example, one method being tested uses the relative size of the newborn to the size of one's hand: if a baby fits in one hand it is low birth weight; if it fits in two, it's okay.

Subsequently, Dr. Koblinsky discussed the Bolivia "WARMI" project as an example of what can be done at the community level to improve newborn outcomes. She explained how the WARMI methodology, through a process of women reaching out to and informing other women, allowed the community to detect problems early when they occur in pregnancy. Next, the process involved men in the prioritization of problems and in the decision process regarding actions to resolve identified problems.

The strategy also involved midwifery training of young community women at the regional hospital and worked with a coalition of NGOs to bring family planning to these communities. In so doing, it addressed the formidable problem of a lack of transport for emergencies; the project helped the community to organize bus and truck transport systems. The project also developed reproductive health IEC materials to better educate the community.

By the end of the project, a huge impact was made in reducing perinatal mortality (from 103 to 38 per 1000 births). Several other indicators increased significantly: contraceptive prevalence from 1.2 percent to 27 percent, immediate breastfeeding from 25 percent to 54 percent, women receiving at least one prenatal visit from 45 percent to 68 percent, use of safe birth kits from 0 to 25 percent, and use of trained midwives from 13 percent to 54 percent.

During participant discussion, Dr. Koblinsky commented on a major cause of hypothermia in newborns in many countries (Bolivia, Bangladesh, Cambodia, Vietnam); people put the baby aside while they wait for the delivery of the placenta. She suggested keeping the mother and baby together (i.e. put the baby to breast) at birth to keep the baby warm. She also distributed an article about a kangaroo mothering project in Ecuador.

ESSENTIAL NEWBORN CARE

RECOMMENDATIONS

- Clean delivery and cord care.
- Thermal protection or hypothermia prevention.
- Early and exclusive breastfeeding.
- Recognition of asphyxia and resuscitation.
- Eye care—prevention of ophthalmia neonatorum.
- Immunization.
- Management of newborn illness.
- Care of preterm and/or low birth weight newborn.

Post-partum Visits: Timing and Content

Donna Vivio
American College of Nurse-Midwives

According to Ms. Vivio, "Post-partum time is not looked on as a very exciting time from the perspective of the clinician. It's not perceived as a time where a lot of drama happens." However, she noted that 60 percent of maternal death occurs in the post-partum period; 45 percent of post-partum deaths occur within 24 hours of delivery, and 65 percent of post-partum deaths occur within one week of delivery. Most maternal death in the post-partum period is caused by hemorrhage. Eighty-eight percent of deaths from post-partum hemorrhage occur within the first four hours after delivery. This is followed by pregnancy induced hypertension and infection. The post-partum period—defined here as from one hour after delivery to 42 days post deliver—is a critical time for mothers.

Ms. Vivio reviewed the need for post-partum care, discussed the timing of such care, and examined several protocols for care of the mother and newborn during the post-partum period and their key elements. Key elements of maternal care fall into three categories—physical needs, emotional needs, and anticipatory guidance (counseling). Included in physical care are general care, blood loss, breast care, perineal care, and nutrition. Emotional needs include: acceptance of the newborn, family response, and maternal fears. Guidance should be provided around family planning and birth spacing.

To illustrate a practical way of implementing these key elements of care, Ms. Vivio demonstrated a record-keeping instrument used in Indonesia in The MotherCare Project to determine the timing and content of visits and care for post-partum mothers. Titled the "Mother Post-partum Care Record," the form describes the type of care and danger signs associated with specific time periods post-partum. She

also shared the WHO's "Key Elements of Post-partum Care," a similar tool that includes care for the newborn. Both tools illustrate the need for early and frequent observation of the mother and the newborn.

Finally, Ms. Vivio described post-partum and newborn components of safe motherhood at the community and institutional levels. At the community level, the main components are: community preparation to recognize the need for referral, mobilization of blood donors, training of TBAs and families in infection control, management of third stage of labor, elements of newborn care, post-partum monitoring, referral to hospital, ability of TBAs and families to identify danger signs, dispensation by TBAs of iron, intervention to prevent mother/daughter abuse, discouragement of harmful post-partum practices, education about nutrition, counseling in family planning, and referral of mother and baby to an institution for post-partum care.

At the institutional level, components include: service protocols, post-partum monitoring, keeping mother and baby together, educating about danger signs, family planning and child spacing, follow-up appointments for continued care, newborn care, and quality assurance. Key in both community and institutional settings is the need for vigilance in the early post-partum period. It is essential to stay with the mother until her physical status is stable, whether at home or in a health center setting.

Participant discussion following Ms. Vivio's presentation focused on the causes of post-partum hemorrhage and how these can be prevented. The health and nutrition status of a woman going into pregnancy is the most important predictor of maternal and child outcomes. Additionally, much post-partum hemorrhage goes unrecorded due to a lack of knowledge and recognition of danger signs, which are often related to traditional beliefs about bleeding.

WHO's Key Elements of Post-partum Care

6-12 hours	3-6 days	6 weeks	6 months
Baby			
breathing warmth feeding cord immunization	feeding infections routine tests	weight/feeding immunization	development weaning
Mother			
blood loss pain blood pressure	breast care temperature/infection lochia	recovery anaemia contraception	general health contraception continuing

Innovative PVO Programs
Lydia Clemmons
The Manoff Group

POST-PARTUM VISITS: TIMING AND CONTENT

RECOMMENDATIONS

- Have a birth plan. Work with communities ahead of time to develop plans for home delivery, attendant, transportation, and referral. Do not leave the mother until she is stable.
- Provide counsel about danger signs to the woman and the family.
- Inform the family of the birth attendant's qualifications, if possible, and seek to have TBAs supported by the health system. TBAs will more readily and appropriately refer if included in, and made welcome by, the health system.
- Consider the place of post-partum care. Most people will want to stay in their homes. Post-partum program planning should include home visits.
- Don't forget about family planning and birth spacing as part of post-partum care.

Ms. Clemmons' presentation illustrated the concept of "cultural empowerment" and its potential for positive impact on maternal health and behavior change. "Cultural empowerment" is both an innovative philosophy and an effective strategy that (1) recognizes the positive aspects of local cultures, (2) promotes people's sense of pride in their cultural heritage, and (3) develops creative ways to utilize cultural strengths and resources in maternal health programs.

In 1993, Africare helped to build a maternity ward in the Dioro District of Mali. Africare and government health staff soon noted the under-utilization of the maternal health facilities; of the expected 30-40 deliveries each month, fewer than seven were occurring. To discover why, Africare held focus group discussions (FGDs) with husbands and wives. They revealed that there were many cultural issues concerning pregnancy and maternal health care that impeded the utilization of the maternal ward—primarily that pregnancy was considered a taboo topic of conversation. Women said that they were embarrassed to talk about pregnancy with their husbands and were ashamed to let others know that they were pregnant. Husbands also said that they felt uncomfortable discussing pregnancy with their wives. Much of the taboo around talking about pregnancy seemed to be that people equated it to talking about "sex," an intimate topic that should not be discussed.

The FGDs also identified several positive cultural aspects concerning household communication. For example, both men and women strongly felt that a woman's husband is her ideal source of advice and support during pregnancy. They also revealed that husbands observe their pregnant wives closely and are extremely concerned about the outcome of the pregnancy.

If we want to promote or change a particular behavior, we need to understand that it is not an isolated action, but part of a set of behaviors that occur within a social or cultural context.

Africare developed an IEC strategy to improve couple communication using the "cultural empowerment" philosophy. The Africare staff used a tool called the cultural resources inventory to identify everything—even mundane, ordinary things—that could be integrated into an IEC strategy. The resources they identified included *griots* (a social caste group of oral historians and praise-singers in Mali), singing, and surprisingly, a traditional undergarment worn by married women. The IEC strategy also used the positive cultural ideal of husbands being major sources of advice and support for their wives during pregnancy.

Three anthropological concepts were also used to develop the IEC strategy: (1) Behavior Scripts, (2) Body Techniques, and (3) Emotional models.

"Behavior Scripts" are normative, learned patterns of behavior prescribed by culture and society. Behavior scripts are not written down, but instead are learned by watching others and internalized so that they become routine and predictable. There are many kinds of behavior scripts; most are determined either by physical place or by cultural or social context. They dictate what is and is not appropriate behavior, depending on where you are, who you are with, and the circumstances. Briefly, the lesson we can learn from the concept of "behavior scripts" is that if we want to promote or change a particular behavior, we need to understand that it is not an isolated action, but part of a set of behaviors that occur within a social or cultural context.

The concept of "behavior scripts" led the Africare staff to brainstorm about the existence of "bedroom scripts" and culturally appropriate ways for couples to communicate, both verbally and non-verbally, about intimate matters like pregnancy.

A second anthropological concept used by the Africare staff was "body techniques." By definition, "body techniques" are physical abilities or skills that are (1) particular to a culture, (2) divided by sex and age, (3) traditional and effective, and (4) learned and deliberate. Examples of "body techniques" in many African cultures are the ability to carry a baby on the back all day long, and the ability to balance things on the head. The Africare/Dioro project staff identified married women's ability to wear a traditional undergarment known as the *pendelu* and, more importantly, their ability to *use* this garment to attract their husbands' attention and to facilitate communication, as a "body technique" that could be integrated into their IEC strategy. The *pendelu* is traditionally white in color and is worn only by married women because it is considered intimate, attractive, and erotic apparel worn in the privacy of the bedroom. A woman's husband is the only person who is supposed to see her wear the *pendelu*. The Africare staff decided to dye the white *pendelu* a bright green, a color which symbolizes newness, growth and fertility in Mali, and to promote the green *pendelu* as a new non-verbal communication tool to symbolize pregnancy and initiate discussion among married couples. The goal was to get married women to wear the green *pendelu* when they were pregnant and to get their husbands to recognize this as a non-verbal signal that their wives wanted communication, advice, and support from them.

Emotional models are the third anthropological concept used to develop the IEC strategy. This concept emphasizes the importance of emotions in human decision-making and human behavior. Love and intimacy between husbands and wives, husbands' sense of pride and responsibility as the "head of the household," and wives' sense of emotional power and control when wearing the *pendelu*, and observing their ability to influence their husbands are some of the emotions that were identified and reinforced in the Africare/Dioro maternal health IEC strategy.

The IEC campaign, which was pilot tested in seven villages, took the form of sex-segregated public assemblies that followed a pre-determined content outline, including an introduction to maternal health care issues, projection of a video on maternal health to provoke discussion, presentation of the green *pendelu* through the *griot's* song and showing a green *pendelu* to the participants, and discussion. In addition, green *pendelus* were distributed free of charge to all women of reproductive age who participated in the seven women's assemblies.

An impact evaluation of the IEC campaign was conducted two months after the pilot test. Of all of the various IEC materials and methods used in the campaign, the green *pendelu* was clearly the most popular and the most remembered. The green *pendelu* was also directly responsible for facilitating a dramatic social change in communicating about pregnancy, which, only two months after the campaign had ceased to be a taboo topic. Prior to the campaign, almost no men or women in the project area had discussed pregnancy. Two months after the campaign, nearly 95 percent of participants said they had discussed pregnancy. Even more surprising, more than 83 percent of people who had *not* participated in the campaign said they had discussed the green *pendelu* and pregnancy. While only 600 people had actually participated in the campaign, the impact evaluation showed that more than 5,000 people in the project area had not only seen or heard about the green *pendelu*, but had also discussed pregnancy. Danger signs, high risk pregnancies, and timely transport to the maternity ward were also frequently discussed by participants of the IEC campaign. Utilization rates at the maternity ward increased up to the expected number of deliveries.

INNOVATIVE PVO PROGRAMS

RECOMMENDATIONS

- Integrate cultural empowerment philosophy and strategies into your programs.
- Work with members of local communities who have expertise in "traditional" strategies for behavior change communication and community mobilization.
- Build collaboration with academic research institutions to get access to helpful research at little or no cost to your program.
- Integrate formative research into a baseline study or during project implementation to assist in the design of creative new strategies.
- Whenever the opportunity presents itself, dare to innovate and to try new things.

Prevention of HIV Infection in Young Children: Elements for Strategic Decision-making
Jacob Gayle
Joint United Nations Program on HIV/AIDS

According to Dr. Gayle, the greatest source of HIV infection in young children is mother to child transmission (MTCT). In 1997, 600,000 infants were infected through their mothers bringing to one million by the year's end, the number of children living with AIDS. Ninety percent of these infected children are in Africa though trends in southeast Asia indicate increasing rates of infection there.

A lack of action is proving costly in terms of increasing mortality and morbidity, as well as the cost of caring for infected children. One of the effective methods of preventing HIV infection is through the provision of antiretroviral therapy (ARV) to HIV positive mothers during pregnancy and offering replacement feeding (RF) instead of breast milk to the infants. Various therapies are being studied at this time. Some studies are looking at the effectiveness of one month of ARV, others have found that one week of treatment of the mother in the last trimester of pregnancy reduces transmission of HIV to the newborn by 37 percent. There are still questions about the benefits of replacement feeding versus breastfeeding. In general, the recommendation is that the efficacy of reducing MTCT be weighed against the risks associated with replacement feeding.

The expected public health impact of using ARV/RF programs is that mortality will be reduced, and there will be improved coverage through the intervention. This coverage is seen as potentially improving the overall quality of MCH services and as strengthening access to and availability of voluntary counseling and testing (VCT) for HIV. This program highlights the need for care and social support of parents who discover they are HIV positive through the VCT intervention and for children who are likely to survive after their parent's death.

However, the expected benefits of this therapy include: (1) better pregnancy related care for all women regardless of their HIV status, (2) strengthened support services for HIV positive individuals, (3) opportunities to strengthen primary prevention and family planning counseling through routine offer of VCT, and (4) decreased denial of HIV/AIDS in communities. Research indicates that providing ARV and RF to known HIV positive pregnant women is affordable and cost effective. Providing VCT/ARV/RF is cost effective where prevalence is high (i.e. over 10 percent) and is less cost effective where there is low prevalence.

Prevention of HIV Infection in Young Children

Recommendations

Consider the following when deciding whether antiretroviral therapy in combination with replacement feeding is the correct direction to pursue in a certain community or country:

- HIV seroprevalence.
- Attitudes toward HIV in the community/country.
- Expected risks of RF and opportunities to reduce these risks.
- Existing health infrastructure and potential for strengthening.
- Expected external benefits.
- Available resources.

Practical Steps to Protect Breastfeeding in a Time of HIV
Jean Baker
LINKAGES/Academy for Educational Development

Ms. Baker focused on the dilemma surrounding breastfeeding when there is a possibility of transmitting HIV to the infant. Much of the problem revolves around the fact that the majority of women in developing countries do not know their HIV status. According to the data, most women are either HIV negative or HIV unknown. The other confusing factor is the actual rate of MTCT of HIV through breastfeeding. For example in a community in which 20 percent of children are born to HIV-infected women and 14 percent of these infants are infected by breastfeeding, about three percent of all infants in the community would be infected through breastfeeding. Another problem is that the international guidance is not specific to countries or to local situations, and there are many unanswered questions about risk and appropriate interventions.

Various risk reduction strategies have been proposed: replacement feeding by HIV positive mothers, exclusive breastfeeding, abrupt weaning at six months, shortened duration of breastfeeding, wet nursing, use of pasteurized milk, micronutrient supplementation, and ARV therapy.

Elements of a strategy to reduce MTCT will differ by country but may include: antenatal voluntary counseling and testing, an appropriate package of care (infant feeding advice, health and family planning services, primary prevention, etc.), advocacy, and promotion and protection of breastfeeding. LINKAGES is beginning to apply this strategy in Zambia where the MOH is trying to mitigate HIV transmission to the larger society. Through extensive qualitative research, LINKAGES is trying to gain a picture of program needs. The research involves different techniques such as: FGDs, in-depth interviews, behavioral observation, market surveys, dietary recalls, and household "trials" (recipes/behaviors). The project is trying to: 1) gain an accurate picture of risks and options, 2) provide training to health workers in counseling skills, and 3) provide support for monitoring and evaluation.

HIV testing should be added to standard antenatal care only when services are available for women who find out they're HIV positive.

Group discussion of both Dr. Gayle's and Ms. Baker's presentations raised questions about mandatory testing. Based on his involvement in such an effort in Texas, Dr. Gayle cautioned against this policy. He commented that where there is no support for this kind of testing, the results will not be accurate. He then stressed the need to analyze the meaning of mandatory testing in a given situation before embarking. He advocated that voluntary HIV testing be added to standard antenatal care, with the caution that this be done only when services are available for women who find out they're HIV positive.

In response to a question about pasteurizing breast milk at home, Ms. Baker responded that it is complicated to do at home. Dr. Gayle noted that Brazil has been able to set up milk banks in an urban middle-income setting (not as doable in a low income/poor access setting). There was also continued discussion about the cost-benefit ratio of ARV/RF, which is expensive. There is contention about how to distribute limited resources, which pits advocate against advocate and women against children. The need to accept HIV testing as a standard part of antenatal care was discussed as well as promoting antenatal care in general.

Practical Steps to Protect Breastfeeding in a Time of HIV

Recommendations

- Adopt an advocacy and information role with policy makers and other stakeholders arguing for appropriate initiatives at the clinic and at the community level.
- Provide information and address misperceptions about MTCT.
- Conduct well organized local level field projects with good qualitative research, currently the missing piece in many program efforts to reduce MTCT.
- Promote universal access to voluntary and confidential counseling and testing.
- Many strategies proposed for MTCT assume the mother's HIV status is known. Testing is the first step.
- Expend extra effort to provide overall support for breastfeeding.

Safe Motherhood Network
Nancy Russell
Centre for Development and Population Activities

In Nepal, myriad NGOs and donors work to improve maternal and child health, many of them undertaking similar actions yet without any coordination nor collaboration among them. They face the same major challenges: reaching women living in remote villages and husbands who migrate for employment, developing culturally appropriate and comprehensible messages, talking about sensitive issues in public, dispelling stereotypes and rumors related to reproductive health, and overcoming the lack of coordination between agencies.

Ms. Russell spoke about social mobilization, a methodology that "is not a one time event, involves many levels of society, and is on-going. It starts scaled-up and creates room for social and individual change. It is the synergy that is created by partnerships and that facilitates sustained change." Networks can be coalitions for sustained change. Unfortunately, most service providers or demand generators are not also charged with "partnership development," yet it is these alliances forged between and among those working in the provision of health care and those receiving it that are the key to changing behaviors over the long term.

Ms. Russell maintained that the social mobilization strategy is replicable. She outlined its components as undertaken in Nepal during her tenure as the Centre for Development and Population Activities's (CEDPA) Resident Advisor. The strategy began at the national level by tying awareness-raising safe motherhood events to national public and religious occasions. Collaborating organizations selected themes that were acceptable by all. They agreed to use the family as the focus of messages and events and to target their work at saving women's lives.

Areas of collaboration included awareness-raising, program coordination to prevent duplication, standardization of safe motherhood messages, use of common statistics, and resource mapping at the district level. Coordination was centralized in CEDPA/Nepal.

The first safe motherhood event was held on International Women's Day in 1996. It reached 41 of 75 districts in Nepal and involved more than 20 international NGOs and local NGOs at a cost of US$4,000, spent mainly on materials. Within two years, safe motherhood messages reached eight to nine million men and women in Nepal, and gathered 50,000-70,000 people for each event. An increasing number of organizations collaborated in the two-to-four safe motherhood events held annually. The goal of the Safe Motherhood Network in Nepal, created through and as a result of the social mobilization process, is to improve the status of women by contributing to safe motherhood through advocacy and awareness creation. The impact of the social mobilization safe motherhood campaign was increased awareness of prenatal life-saving messages for families and the increased use of clean delivery kit.

Some of the challenges of social mobilization were mentioned. Most notable was the massive amounts of labor and of materials involved in organizing events as awareness-raising tools. However, the benefits of events include: the breakdown of barriers, generation of enthusiasm, cost effectiveness, and they are catalysts for future activities.

SAFE MOTHERHOOD NETWORK

RECOMMENDATIONS

- Use events to raise awareness and break down barriers; they are low-cost and cost-effective.
- Involve the community in event planning; this creates enthusiasm for the issue.
- Build networks as coalitions for sustained change.
- Events themselves can become catalysts for future activities.

Challenges for the Next Millennium
Susan Rae Ross
Cooperative Assistance and Relief Everywhere

In the workshop's closing presentation, Ms. Ross sought to synthesize the messages and recommendations shared during the three days and pose them to participants as on-going and future challenges. She complemented her presentation with the integration of information presented in CARE's publication, *"Promoting Quality Maternal and Newborn Care: A Reference Manual for Program Managers."*

Maternal mortality and morbidity can be lessened by interventions that reduce:

- the incidence of high risk and unwanted pregnancies by improving access to quality family planning and safe (induced) abortion services;
- the number and severity of obstetric complications through pre-pregnancy care, antenatal care, clean and safe deliveries with skilled providers, and quality post-partum care; and
- the case fatality rate by improving access to quality obstetrical and post-abortion care services.

Peri/Neonatal mortality can be lessened by interventions that:

- improve women's health/nutritional status through promotion of good nutrition; delaying the first birth; spacing between pregnancies of two, and preferably three years; and prevention/ treatment of infections;
- improve maternal care in nutrition, treatment of micronutrient deficiencies; tetanus vaccination; treatment of malaria, hookworm, and STIs; and clean and safe delivery with a skilled provider, and;
- ensure newborn care, immediate/ exclusive breastfeeding, immunizations, and prompt identification and treatment of pneumonia, diarrhea, and other infections in the first week of life.

Our combined experience is extensive; we know many things. Some of the best current beliefs and practices highlighted in this workshop and contributed by others in the field are summarized below.

Antenatal Care

- **Screening Programs:** Screen for complications instead of using the "at risk" approach. Having identified complications, refer women in a timely manner to an appropriate facility.
- **Birth Planning/Preparedness:** Plan ahead to ensure that women have safe, healthy pregnancies. Women and their families must know the importance of seeking care, identify danger signs, know the nearest appropriate facility at which to obtain treatment and how to get there, mobilize resources to access those services and a clean delivery attended by a skilled provider.

- **Treatment of Micronutrient Deficiencies:** All pregnant women need daily doses of iron/folic acid in the second and third trimesters. Where pregnant women suffer Vitamin A deficiency, they should be treated daily with 10,000 International Units (IUs). Giving all pregnant women Vitamin A to reduce overall mortality is still a questionable practice.

- **Treatment of Infectious Diseases:** Screening and treatment of syphilis is highly recommended to enhance newborn outcomes and improve the woman's health. For women in malaria endemic areas, new studies have shown that presumptive treatment with Fansidar are effective in reducing the negative effects of malaria on the newborn. All HIV positive women need three doses of Fansidar.

Childbirth

- **Emergency Obstetric Services:** All pregnant women need access to these services. For a population of 500,000, four basic EOC services sites are required as well as a comprehensive EOC facility that provides basic services as well as anesthesia, blood replacement, and surgery.

Post-Partum

- **Immediate Post-partum:** Since most deaths occur late in labor or during the immediate post-partum period, all women need to be closely monitored by a skilled provider for at least the first four hours post-partum, or a return provider visit within 12 hours.

- **Intermediate Post-partum:** Another visit should occur in the first week after birth, particularly to look for sepsis, assess the lochia and uterus, and counsel on breastfeeding and family planning.

Newborn Care

- **Immediate Newborn Care:** Most deaths occur in labor or in the first 24 hours of life, thus essential newborn care—initiation of breathing, cord care, thermal protection, eye care, and immediate/exclusive breastfeeding—is vital to the newborn's survival.

- **Early Newborn Care:** Another provider visit should occur in the first week, particularly to look for infections, which may be manifested by poor sucking/eating, hyperactivity or lethargy, hypo/hyperthermia, and to administer immunizations.

And yet, our experience also shows that much remains to be done:

- **Screening:** Identify better screening parameters.

- **Micronutrient supplementation:** Determine Vitamin A's contribution to reducing maternal and neonatal mortality and to reducing mother-to-child transmission of HIV/AIDS. Determine zinc's contribution to reducing neonatal morbidity. Assess calcium's potential to reduce pre-eclampsia, and multivitamins' contribution to the health of HIV positive women.

- **Delay Model:** Better understand the relationship/role of community mobilization and the increased use of health services.

- **Community Systems for Post-partum Care:** Explore and pilot approaches to extend the delivery care and follow-up by trained community personnel. Refocus key messages to encourage traditional and community systems to address post-partum complications.

- **Community systems for Neonatal Care:** Pilot programs at the community level that employ simple measures by non-medical personnel to treat the causes of neonatal death.

- **HIV and Breastfeeding:** More research is needed overall. In the meantime, decisions will need to be made based on the local circumstances and context.

- **Scaling-Up Successful Programs:** Determine what is needed to sustain program impact by pulling together all of the pieces of successful programs/ models in a geographic area.

In summary, Ms. Ross outlined the following contributions that PVOs can make toward improving maternal and neonatal health:

- Provide community-based interventions.

- Foster linkages between the community and health services.

- Document community-based programs.

- Advocate for culturally appropriate programs with district and national officials as well as international policy-makers.

- Ensure that the community is part of the agenda.

Ms. Ross closed by urging the PVO community to renew its commitment to making a difference in the health and survival of women and newborns.

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Ms. Armbruster is a midwife trained in Liberia. She holds a Master's Degree in Public Health from Johns Hopkins University. For almost 15 years, Ms. Armbruster has been with ACNM's Special Projects Section where her work focuses on traditional birth attendant training programs, work with midwifery associations, and reproductive health training. Ms. Armbruster spent two years in Ghana working with the Ministry of Health and the Ghana Registered Midwives Association. She has been Director of Special Projects for the past three years.

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Ms. Arteaga is a Bolivian national, born and raised in La Paz, Bolivia. She is a graduate of the *Universidad de San Andres* in La Paz where she majored in linguistics with a specialization in psychology. After graduating, she worked for 12 years in family planning and reproductive health with CIES, a local non-governmental organization dedicated to reproductive health, which became the national affiliate of the International Planned Parenthood Federation. Ms. Arteaga was the director of training and information, education, and communication at one of CIES's oldest and most successful clinics. In 1995, Ms. Arteaga joined Save the Children and became the coordinator of the "WARMI" program, dedicated to improving maternal and neonatal health in predominantly rural Bolivian communities. Since 1997, she has been the Adolescent Programs Coordinator for Save the Children/Bolivia.

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Ms. Baker directs the USAID-funded LINKAGES Project (Breastfeeding and Related Complementary Feeding and Maternal Nutrition) at AED. Her career has spanned 20 years of work in child survival, family planning, and nutrition, including two years with the Adventist Development Relief Association as Senior Technical Advisor for a Child Survival project in Nepal, five years in Kenya as MSH Resident Advisor for the Family Planning Management Development Project, and several years for the Population Council in Thailand focused on family planning and infant feeding. Her first overseas experience was as Population, Health, and Nutrition Program Officer for the Asia Foundation in Pakistan. She has written on infant feeding, HIV/AIDS, family planning and, most recently, "The Time to Act: Women's Nutrition and Its Consequences for Child Survival and Reproductive Health in Africa." She holds a Master's degree in Public Health from the University of Michigan.

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Dr. Donnay is an obstetrician-gynecologist who also holds a Master's degree in Public Health. Early in her career she worked as a consultant to the World Health Organization, The World Bank, and Doctors without Borders before joining UNICEF as Women's Health Advisor. At UNICEF, she was key to advocacy for the Safe Motherhood agenda, as well as responsible for coordination and formulation of UNICEF policies and programs on safe motherhood and reproductive health. After four years at UNICEF, Dr. Donnay joined UNFPA.

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Ms. Elder is Nutrition Advisor for The MotherCare Project, a USAID-funded project focusing on maternal and newborn health and nutrition, implemented by JSI. She worked internationally and domestically in pediatric and obstetric nursing before completing graduate education in international maternal and child health at Johns Hopkins University School of Hygiene and Public Health in 1989. Prior to joining MotherCare in November 1997, Ms. Elder worked as a nutrition specialist in the Human Development Department of The World Bank for six years, where her technical emphasis was on lactation and infant feeding. As Nutrition Advisor for The MotherCare Project, she focuses on iron deficiency and anemia control and prevention, and its integration in prenatal and post-partum health service programs in country projects.

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In 1998, Dr. Gayle was appointed by UNAIDS to serve as Technical Advisor and Liaison to The World Bank, for two years. Previously, Dr. Gayle served UNAIDS as its Intercountry Programme Advisor for the English- and Dutch-speaking Caribbean. He also worked with USAID in both South Africa and Washington, D.C. An employee of CDC since 1989, Dr. Gayle served at CDC's headquarters as Special Assistant to the Director, HIV for matters pertaining to U.S. racial and ethnic minority populations through 1991 before undertaking a special short-term assignment with former President and First Lady Jimmy and Rosalyn Carter as Health Secretariat for The Atlanta Project. Dr. Gayle is also an adjunct Associate Professor within the Rollins School of Public Health at the Emory University. He holds a M.S. in Preventive Medicine, a M.A. in Health Education/Community Health, and a Ph.D. in Community/International health from the Ohio State University. He has been the recipient of several professional awards pertaining to public health and international service and author of publications within public health and HIV/AIDS.

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Dr. Koblinsky has directed The MotherCare Project since 1989. In this capacity she has organized and provided technical leadership for international and technical meetings, nurtured collaborative relations with other interested agencies, research institutions and individuals, and moved the international agenda based on field realities and evidence of success. Within The MotherCare Project, Dr. Koblinsky has given high priority to drawing lessons from ongoing projects and the literature, clarifying issues within maternal and neonatal health and nutrition, and widely disseminating the results of these efforts in print. She has co-edited a book on women's health and written extensively, including a chapter on healthy pregnancies and childbearing in a 1996 book for the National Academy of Sciences. In 1996, Dr. Koblinsky was awarded the International Health Leadership Award from the National Council for International Health. In 1998, The MotherCare Project was a recipient of the World Health Day Award issued by the American Association for World Health.

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Dr. Labbok currently serves as the Division Chief, Nutrition and Maternal/Infant Health, Office of Health and Nutrition, G/PHN at USAID. She has more than twenty years of research and program experience in population issues in preventive medicine, including family planning, breast- feeding, related nutrition and fertility, natural family planning, women's reproductive health, and maternal and child health. In 1989, she was named Director of the Breastfeeding and Maternal and Child Health Division of the Institute for Reproductive Health, responsible for the development of the Lactational Amenorrhea Method (LAM). In 1992 the Division was designated the first WHO Collaborating Center on Breastfeeding. Dr. Labbok, a Fellow of the American College of Preventive Medicine with training in Pediatrics, also serves on the Medical Advisory Board of La Leche League and the International Lactation Consultants Association, is a founding member of the international Academy of Breastfeeding Medicine, serves on the Board of Directors of the International Board of Certified Lactation Consultants, has served on several domestic health advisories, has published more than 135 articles, chapters, and books, more than 120 published abstracts, and has been an invited speaker at more than 220 public health, international policy, university, and scientific meetings.

Gail Montano, MPH, MIA
Senior Program Officer, Project Concern International (PCI)

Ms. Montano has worked in the international health care field for more than 15 years. Currently, she provides technical and administrative support for PCI's Central and South American programs. Her areas of specialization include integrated women's health care, advocacy, and curriculum development for low and illiterate populations. She has designed, implemented, and monitored health care programs in diverse settings, including the Guatemalan Maternal Infant Primary Health Care Project, the Hispanic Women's Breast and Cervical Cancer Awareness Project in Arizona, and evaluation of a community health educator program on the U.S./Mexico border. Ms. Montano holds both a Master's degree in Public Health and a Master's in International Affairs from Columbia University.

Judith Moore, SRN, SCM, Dip. Trop. Med, MSc
Technical Officer, BASICS, John Snow, Inc. (JSI)

Ms. Moore is a nurse midwife, trained in England, who also holds a post graduate diploma in Tropical Diseases from the London School of Hygiene and Tropical Medicine and a Master's degree in Health Planning and Management for Developing Countries from Cardiff University. After practicing midwifery in England, Ms. Moore spent 10 years with Save the Children Fund/UK on overseas projects in East Africa and Asia, mostly working on maternal child health programs. She also spent a fair amount of time in refugee situations in Ethiopia, Somalia, Iraq, Nepal, and Zaire. She completed a two-year epidemiology fellowship at CDC's Division of Reproductive Health. Ms. Moore joined the BASICS project two years ago as a Technical Officer in Primary Health care with particular responsibility for the perinatal and neonatal agenda.

Monica Parise, M.D.
Medical Officer, Centers for Disease Control and Prevention (CDC)
Dr. Parise is a physician trained in internal medicine and infectious diseases. For the past six years she has put her skills to use at the CDC. Her work is primarily international in scope and involves the prevention of malaria and its adverse affects in pregnant women and their infants, primarily in sub-Saharan Africa. Initially trained as a registered nurse at the University of Pittsburgh, Dr. Parise later attended their medical school and then specialized at Harvard University's Medical School.

Susan Rae Ross, B.S., MPH
Senior Reproductive Health Advisor, Cooperative Assistance and Relief Everywhere (CARE)
Ms. Ross has eight years of international public health experience, most residing overseas, in which she has focused on reproductive, maternal, and child health programs. Ms. Ross previously worked for ten years in nursing—she holds a B.S. in Nursing from the State University of New York at Plattsburg—and for five years for USAID in Africa (Nigeria and Eritrea). Since 1996, Ms. Ross has worked for CARE, first as their regional reproductive health advisor in Asia. In this capacity she provided technical assistance in design, implementation, and evaluation to 10 CARE Country Offices in Asia. In 1998, Ms. Ross moved to CARE headquarters as one of three Senior Reproductive Health Advisors backstopping the Asian reproductive health portfolio and spearheading the Safe Motherhood Initiative. Ms. Ross also serves as Co-Chair of the Safe Motherhood Working group of The CORE Group. She holds a Master's in Public Health from the University of Illinois.

Nancy Russell, M.A.
Senior Technical Advisor, Centre for Development and Population Activities (CEDPA)
Ms. Russell holds a B.A. in Art Education and a Master's degree in Non-Profit Administration from the University of San Francisco. She worked domestically in community organizing for 25 years before moving to Nepal in 1991 to broaden her experience. There, she volunteered for two years with local women's groups and founded a training group called *Didi Bahini*, "Big Sister/Little Sister." From 1993 until her return to the U.S. in 1998, Ms. Russell worked as CEDPA's Resident Advisor in Nepal. She returned to CEDPA's U.S. headquarters as Senior Technical Advisor for Community/Social Mobilization under the ENABLE and maternal and neonatal health projects. Ms. Russell's path to health has been circuitous, yet her contributions follow a common thread--working with people to develop creative new approaches that help them to take action.

Lynn M. Sibley, M.S., CNM, Ph.D.
Senior Technical Advisor, American College of Nurse-Midwives (ACNM)/PRIME
At ACNM, Dr. Sibley works in the Special Projects Section on the USAID-funded PRIME Project. She is also an Adjunct Assistant Professor of Anthropology at Emory University in Atlanta, GA. She was on the faculty of the University of Colorado Nurse-Midwifery Graduate Program from 1981-1985 and earned her doctorate in anthropology from the University of Colorado in 1993. Dr. Sibley documented the work of practicing TBAs in Belize during 1989–1991. Her research focused on the relationship among TBA training, knowledge, and practices and their influence on maternal health. Current research activities include a meta analysis of TBA training evaluation and a "Community Partnerships for Safe Motherhood" feasibility study in the north Indian state of Uttar Pradesh, India.

Cindy Stanton, MPH, Ph.D.
Evaluation Analyst, Child Survival Technical Support Project, MACRO International, Inc.

Ms. Stanton is seconded from Johns Hopkins School of Hygiene and Public Health to the Measure/ Evaluation Project where she is responsible for maternal health activities. Her work has concentrated on measurement issues, particularly in the area of maternal mortality, morbidity, and process indicators of maternal health. For the past 15 years, Ms. Stanton has applied her technical skills as a consultant and research/survey technician with organizations such as UNICEF/WHO, Family Health International, Westat, Inc., and the Institute for Resource Development. Her overseas experience includes work in Cote d'Ivoire, Ethiopia, Mali, Senegal, Togo, and Zaire.

Jennifer Winestock Luna, MPH
Health Associate, Plan International - USA

Ms. Winestock Luna is currently a Health Associate for Plan International - USA, based in Arlington, Virginia. She is a biologist and epidemiologist with a Master's degree in Public Health. Her experience includes 12 years of work in Bolivia with different organizations. She has worked in the areas of reproductive health, AIDS prevention, and child survival. Her areas of expertise include project development and management, monitoring and evaluation, and information systems.

Donna Vivio, M.S., CNM
Senior Technical Advisor, American College of Nurse-Midwives (ACNM)

Ms. Vivio is a certified nurse-midwife who currently works as a Senior Technical Advisor in the Special Projects Section of the ACNM. She received her Master's degree in Public Health at Johns Hopkins University and her M.S. in Nurse Midwifery at Georgetown University. Ms. Vivio is currently on the faculty of Georgetown University's School of Medicine and School of Nursing. She continues to work actively in clinical practice.

APPENDIX:

The CORE Group
"Effective Strategies to Promote Quality Maternal and Newborn Care" Workshop
Small Group Work

INSTRUCTIONS FOR SMALL GROUPS

1. The purpose of the small groups is to give participants an opportunity to think about and plan strategies for addressing maternal and newborn care issues in a simulated situation. Participants will be presented with a series of case studies depicting maternal and newborn problems and will be asked to draw upon the meeting presentation and their own experience to answer the questions and discuss ways to address each of the identified problems.

2. The group will select a chair and rapporteur. One member of the Safe Motherhood working group will be assigned to answer questions and function as a facilitator. For each case, two of the six groups will present results to the large group. All the groups will record their case analysis and answers to the questions on flip chart paper, which will then be posted on the wall for review by members of the large group.

3. The role of the chair leaders is to guide the processes of:
   1) reviewing the case study with the group members, and
   2) facilitating the group answers to the questions provided at the end of the case study.

4. The role of the rapporteur is to record the group's case analysis and answers to the questions on flip chart paper.

5. Chairs are asked to give the written results of the workgroup (case analysis and question responses) to the meeting facilitator, Sandy Wilcox, so that the information can be presented in the meeting report. Also include the name of the facilitator and the group color and members (SM working group member: Please make sure this happens).

CASE 1A: ANTENATAL CARE
VERY POOR MATERNAL HEALTH SETTING

% of pregnant women who receive 3 antenatal care (ANC) visits	35%
% of pregnant women who receive 2 tetanus toxoid (TT) shots	30%
Average age at first birth	16.4 years
% of pregnant women that are anemic	50%
% of women who know one danger sign	15%
Total Fertility Rate	5.9
Maternal Mortality Rate	Greater than 600

Context

This district is predominately rural; agriculture is the main occupation. Mothers-in-law and husbands are the main decision-makers. Most women are illiterate (80%) and have low status within society. They can generally **NOT** go to the market nor seek health services without a male escort. While most people are Buddhist, they also have strong traditional beliefs.

Community

Women generally do **NOT** admit that they are pregnant until the sixth or seventh month because they feel that this will make the baby susceptible to evil spirits. Families believe that pregnant women should avoid the sun and reduce their dietary intake, particularly of salt, rice, green leafy vegetables, and meat to ensure a small baby (which is highly valued). If there is a problem during pregnancy, they consult the traditional healer who provides common treatments, such as 1) massage for pain in the back, vagina, and belly; 2) herbs to induce vomiting to help turn the baby; and 3) injections to cool the body.

Sari is a 24-year-old in her eighth month of her fifth pregnancy. She has not received any ANC check-ups, iron supplementation, or TT during any of her pregnancies. In her second trimester Sari complained to her family that she had a very hard time seeing, particularly at night.

Health Services

In this district there are five functional health posts, two health centers, one government hospital, and one missionary hospital. ANC services are underutilized because:

1. pregnancy is not acknowledged until the third trimester
2. most people (80%) live more than 10 kilometers from a health facility
3. most of the time the facilities do not have iron tablets or TT vaccination
4. the health workers do not speak the same dialect as the villagers

RESULTS OF SMALL GROUP WORK: GROUP 1/CASE 1A
VERY POOR COMMUNITY SETTING

1. The beliefs/practices/traditions that contribute/inhibit Sari from receiving antenatal care services are:

- Women only acknowledge their pregnancies in the sixth or seventh month because they believe that earlier acknowledging will make the baby susceptible to evil spirits.
- Women need a male escort to attend health services.
- Women desire small babies and therefore do not maintain a healthy food intake during pregnancy.
- Families believe that pregnant women should avoid the sun, hence should not walk to receive ANC.
- Families first consult the traditional healer, who often recommends detrimental health practices.

2. Key messages and desired behavior changes to increase Sari's uses of ANC services include:

- Improve nutrition, and encourage vitamin A and iron supplementation.
- Decrease induced vomiting.
- Train the traditional healer to promote tetanus toxoid immunization in the community.

3. Interventions that could be undertaken in the community to increase the use of ANC services include:

- Create health messages that target husbands and mothers-in-law, particularly in the area of improving antenatal nutrition and recognition of danger signs during pregnancy.
- Develop an Asian version of the *Green Pendulu*, a culturally-specific, non-verbal communication strategy developed by Africare in Mali, to improve couple communication.
- Arrange for the traditional healers to work more closely with the health service delivery system.

RESULTS OF SMALL GROUP WORK: GROUP 2/CASE 1A
HEALTH SERVICES SETTING

1. Weak areas in the provision of ANC services that may inhibit women from coming to these services include:

- Facilities often do not have adequate supplies of iron tablets or TT vaccinations.
- The health workers do not speak the same dialect as the villagers.
- Most people live more than 10 kilometers from a health facility.
- There is no community outreach for ANC.

2. Interventions that could be used to improve access and quality of ANC services at the health post and at the health center are:

- Improve outreach and transportation to services.
- Encourage community-based and community-sponsored development of additional and more accessible health services.
- Stimulate the potential for increased outreach through use of non-formal health care delivery mechanisms (village health volunteers).
- Assure good communication among all health care system participants: health workers, volunteers, and government.
- Work to combine/synchronize services and other events in the community in order to benefit health care consumers.
- Establish systems to ensure support for adequate supplies, equipment, and drugs, especially iron tablets and TT.
- Address the language barrier between villagers and service providers.
- Take advantage of the leveraging opportunities to advocacy for increased services presented by the Community Health Associations.
- Collect more information on health care costs in order to make informed decisions about the best strategies for improving quality and coverage of ANC.

3. Key messages and desired behavior changes for the services providers include:

- Service provider's interaction with clients should be respectful.
- Service providers should develop/increase dialogue and open communication with traditional care providers.
- Service providers should install a rational record keeping system.
- Service providers should engage in quality assurance activities.
- Service providers should have increased awareness of supply logistics issues, i.e. problem of stockouts, etc.
- Stimulate community involvement in the definition of local quality of care.
- There should be increased accountability of the health workers to the community.
- Improve methods to evaluate the quality of services that are being delivered through all types of health service providers.

CASE 1B: ANTENATAL CARE
POOR MATERNAL HEALTH SETTING

% of pregnant women who receive 3 ANC visits	45%
% of pregnant women who receive 2 TT shots	40%
Average age at first birth	17.4 years
% of pregnant women that are anemic	40%
% of women who know one danger sign	30%
Total Fertility Rate	4.9
Maternal Mortality Rate	600-450

Context

This district is rural with some peri-urban areas. Agriculture and casual day labor are the main occupations. Mothers-in-law and husbands are the main decision-makers, but women go to their mother's house to deliver. Many women are illiterate (60%) and have low status within society. They can go to the market and seek health services with a female escort. While most people are Muslim, they also have strong traditional beliefs.

Community

Most women see pregnancy as a normal process and do not see the need for ANC services. Families believe that pregnant women should not go out at night, avoid the cold, and reduce their dietary intake, particularly of green leafy vegetables and protein to ensure an easy delivery (small baby). If there is a problem during pregnancy, they consult the traditional healer who provides (1) massages to turn the baby, and (2) medicines for the woman to cool the body.

Fathma is a 22-year-old in the ninth month of her fourth pregnancy. She has not received any ANC check-ups, iron supplementation, or TT during in her previous pregnancies. Recently, midwives started coming to her village, so she has received two ANC check-ups and one TT vaccination. Fathma began taking iron (for three weeks) but she had many side effects so she stopped. She has complained of weakness and being tired during her pregnancy, with some fever, but she has NOT received any malaria treatment.

Health Services

In this district there are eight functional health posts, four health centers, one government hospital, and two missionary hospitals. ANC services are underutilized because:

1. Women go to their mother's houses in their seventh month of pregnancy and may not be eligible for services in that catchement area.
2. Most people (80%) live more than five kilometers from a health facility.
3. The health worker doesn't show up regularly for the outreach services, and when she does, she often doesn't have iron tablets or TT vaccination with her.

RESULTS OF SMALL GROUP WORK: GROUP 3/CASE 1B
COMMUNITY SETTING

1. The beliefs/practices/traditions that contribute to/inhibit Fathma from receiving antenatal care services are:

Inhibiting Factors:
- Fathma probably lives a far distance from the health center.
- To attend health services, Muslim women need to be accompanied by men or older women.
- Folks consider pregnancy to be part of the normal state of affairs and therefore only seek care when there are problems.
- When women go to their parent's homes, they leave their catchement areas thus making themselves ineligible for treatment.
- Women tend to receive care from relatives and traditional healers instead of trained health care personnel.
- There is a shortage of iron and TT supplies at the health center.
- There is poor outreach to the community by the health workers.

Contributing Factors:
- A midwife has recently arrived in the community.
- Fathma is open and willing to take supplements.
- Women can go to the health center with an escort.
- Health facilities do exist.

2. Key messages and desired behavior changes to enhance the use of ANC services include:

Behavior Changes:
- Increased attendance at ANC services.

Messages:
- Know danger signs.
- Avoid complications.
- Get ANC so mother and baby will be healthy.
- Seek appropriate care when there are problems.
- Seek ANC to be strong, to learn about self-care, and the care of the baby (breast feeding, TT).
- Serve as a role model—seek ANC—and encourage other mothers to do so.
- Seek ANC to get information about how to deal with possible side effects from iron supplementation.
- Develop a birth plan with the health worker.
- Two-way, open communication between client and provider is essential for good care.

3. Interventions that could be undertaken in the community to increase the use of ANC services include:

Health Provider Interventions:

- Health workers should make frequent visits to the homes of pregnant women.
- Health facilities should have fixed supplies of vaccines and supplements.
- Health providers should have a client-focused attitude and be culturally sensitive.
- Health providers should improve the environment of services, i.e. open on time, have adequate staff, and ensure operating hours.
- Health providers should provide orientation to available health services.
- Health workers should provide education about nutrition, diet, etc., while visiting the community.
- Where distances between the village and the health facility are far, health providers should take their services to the community.

Community Interventions:

- Use traditional healers and other community members, i.e. traditional birth attendants (TBAs), elders, and religious leaders to motivate women.
- Use peer group counseling (positive deviance).
- Help women find transport to distant health services.
- Institute a revolving fund to help pay for health services and transport during pregnancy and illness.
- Institute a reward system for community members who help refer women, hence strengthening the referral system.
- Establish a safe motherhood committee in the community to inform folks about available services for safe motherhood (birth planning, etc.).

RESULTS OF SMALL GROUP WORK: GROUP 4/CASE 1B
HEALTH SERVICES

1. Weak areas in the provision of ANC services that may inhibit women from coming to these services include:

- ANC services have irregular outreach; health workers don't show up for work.
- People prefer traditional healers; there is a likely cultural gap between traditional practices and health center providers.
- ANC services lack adequate supplies (iron folic acid (IFA)/TT).
- If a woman moves in the middle of her pregnancy, she is likely to be unable to receive care in the new locale.
- Women are inhibited or unwilling to be seen by male providers.
- The clinic is too far away for convenient access.
- ANC is viewed as a luxury for the "normal" condition of being sick; there is a need to market health services for improved health.
- There is no health service evaluation and monitoring.
- ANC services experience a lack of education and counseling re: nutrition, IFA, and side effects.
- There are questions about the quality/technical competence of the referral system.

2. Describe the interventions that could be used to improve access and quality of ANC services at the health post and at the health center.

- Conduct a thorough health facilities assessment (HFA) with active community participation, including logistics, training needs, outreach schedule, accommodation of cultural beliefs and practices, eligibility for services, supervision, community relations/community perceptions, level of decentralization.
- Review HFA results and use a participatory process to solve problems.
- Establish a community marketing strategy for ANC that targets pregnant women, community leaders, decision makers, religious leaders, TBAs, and traditional healers.
- Ensure supplies (IFA, TT, malaria TX) and attendance by provider.
- Conduct provider training in malaria interventions, and counseling and education with a focus on nutrition.

3. Key messages and desired behavior changes for the services providers include:

- Follow treatment protocols to rule out infectious diseases and malaria.
- Nutrition education is essential for every woman.
- Regular supplies are essential: order buffer stock and order in advance.
- Set and honor an outreach schedule.
- Know your community, understand the culture, adopt the practice of “we care.”
- See any pregnant woman who arrives for care even if she’s not from the catchement area.
- Work with higher level employees on issues of supervision, supplies management, and advocacy.

CASE 1C: ANTENATAL CARE
MODERATE MATERNAL HEALTH SETTING

% of pregnant women who receive 3 ANC visits	55%
% of pregnant women who receive 2 TT shots	50%
Average age at first birth	18.1 years
% of pregnant women that are anemic	30%
% of women who know one danger sign	45%
Total Fertility Rate	4.0
Maternal Mortality Rate	Less than 450

Context

This district has rural, peri-urban, and urban areas. Agriculture and casual day labor are the main occupations. Mothers-in-law and husbands are the main decision-makers. Many women are literate (illiteracy 40%). They can go to the market and seek health services alone, but usually go with another female family member. While most people are Christian, they also have strong traditional beliefs.

Community

Most women receive one ANC visit but few receive three visits. Families believe that women should avoid the cold and that edema during pregnancy is a sign that there will be an easy delivery. Women often go to private doctors during pregnancy to get injections and IV saline solutions for weakness.

Anna is a 22-year-old in the eighth month of her fourth pregnancy. She has received two ANC check-ups, iron supplementation, and two doses of TT. For the last month she has been complaining of some fever and foul smelling vaginal discharge, but she has not received any treatment.

Health Services

In the district there are 15 functional health posts, 10 health center, five private maternities, three government hospitals, and three missionary hospitals. There are no transportation funds for the health workers; this restricts supervision services. ANC services are underutilized because:

1. The health workers are often not at the health facility.
2. Women say the health workers are rude and don't answer their questions.
3. Unless there are at least 10 women the health worker will not open the 50 ml TT vial for vaccination.

(Note: While access has improved, quality is still lagging. The women say they would rather visit a TBA who will give a massage and listen to their concerns than go to health post/center.)

RESULTS OF SMALL GROUP WORK: GROUP 5/CASE 1C
COMMUNITY

1. The beliefs/practices/traditions that contribute/inhibit Anna from receiving antenatal care services are:

- People do not have the habit/custom of seeking health care services on a regular basis.
- Anna has a lack of knowledge about danger signs during pregnancy.
- The health facility is a far distance for Anna to travel.
- Anna has limited knowledge of child spacing services.
- The availability of child spacing services is questionable.

2. Key messages and desired behavior changes to enhance the use of ANC services include:

- Recognize danger signs and mobilize transport when it is necessary to seek health care.
- Use family planning/child spacing.
- People need to know the benefits of using health facility services to address their needs and what defines a quality visit.
- Education, especially about problems associated with harmful local practices and treatments, needs to be targeted to mothers-in-law, husbands, and community leaders.

3. Interventions that could be undertaken in the community to increase use of ANC services include:

- Develop a village health committee to advocate for better quality services.
- Link TBAs with health facilities.
- Assess TBA knowledge and skills.
- Provide TBA training focusing on danger signs and prepregnancy norms; information, education, and communication (IEC); family planning; etc., so that TBAs may provide better quality community education.

RESULTS OF SMALL GROUP WORK: GROUP 6/CASE 1C
HEALTH SERVICES

1. Weak areas in the provision of ANC services that may inhibit women from coming to these services are:

- Workers are obviously not interested in quality; their attendance is irregular, which may be due to the lack of supplies and medicines.
- There is a lack of predictability and availability of TT.
- Patients come for curative-type care, IV saline solutions and injections; there is no real desire for preventive care. Patients may prefer private clinics for injections due to a lack of education about ANC services.
- ANC services may not sufficiently service the population in their assigned geographic area.
- There is questionable commitment on the part of the government, manifest in terms of staff absences and unstocked supplies.
- Even though clients register complaints, they do not receive treatment.
- There is a possibility that health care workers do not have the knowledge, nor equipment or supplies they require to do their jobs.
- Health professionals may not be well compensated for their work.
- There is a preference for TBA care as opposed to health care staff.

2. Interventions that could be used to improve access and quality of ANC services at the health post and at the health center include:

- Review the management and supervision of the entire system.
- Interview the community to find out why they don't use the facility.
- Involve the community in the management of health services in their area.
- Institute cost sharing of health workers with the community.
- Take steps to enhance and familiarize TBAs with the health professionals.
- Assess skill levels of workers to determine training needs.
- Assess the convenience for the community of the operating hours of the health posts/centers.
- Provide health workers some kind of payment from the community to add value to the staff services.
- Provide bikes for health care workers.

3. Key messages and desired behavior changes for services providers include:

- Seek behavior changes that are respectful of each individual and professionally responsible.
- Adopt “Learning & Lifetime Objectives.”
- “You are an important person and your skills are vital to the health of the community.”
- “You save lives.”
- “You are a change agent—you have the power to effect change.”
- Change the demoralized attitude of the staff to one of potential positive effects of interventions.
- Facilitate meetings. Encourage on-going problem solving.
- Examine the gender issue in the health care arena.

CASE 2A: COMMUNITY AND EMERGENCY OBSTETRIC CARE (EOC) VERY POOR MATERNAL HEALTH SETTING

% of population more than 10 kilometers (kms) from Basic EOC	50%
% of population more than 10 kms from Comprehensive EOC facility	65%
Skilled Providers/Population	15/10,000
% pregnant women who are anemic	50%
% of institutional deliveries	9%
Met Need of Obstetric complications	3%
% of women use a clean delivery kit	15%
Maternal Mortality Rate	Greater than 600

Context

This district is predominately rural with agriculture being the main occupation. Mothers-in-law and husbands are the main decision-makers. Most women are illiterate (80%) and have a low status within society. They can generally **NOT** go to the market nor seek health services without a male escort. While most people are Buddhist, they also have strong traditional beliefs.

Community

Ninety-five percent of women deliver at home, about half of them deliver with an untrained TBA and another 30% deliver with a trained TBA.

Sega, a 20-year-old woman in her fourth pregnancy, lives with her husband and in-laws. She received no ANC care. She has had four previous live births; one died in the first week after delivery and another died at eight months of age.

Sega began to have contractions at 2PM on March 6, 1998. Four hours later her mother-in-law went and brought the (untrained) TBA. Sega did not progress and the TBA returned at 10PM to give her some tea to speed up her labor. The TBA came back the next day at 10AM and examined Sega. She told the husband that the traditional healer would have some herbs that would work better. At 1PM the TBA returned with the traditional healer who gave Sega some herbs to induce vomiting. He said that she had not delivered because she had not confessed her sins—only when she did this would she deliver. Seven more hours went by and the baby had still not come. The mother-in-law began to think that Sega should go to the hospital, but Sega's husband was away working in another state. It took another four hours for the mother-in-law to bring this before the elders and get their permission to move Sega to the hospital. It took another four hours to borrow money from the mother-in-law's brother and find transport.

Health Services

In this district there are five functional health posts, two health centers, one government hospital, and one missionary hospital. At 4PM Sega began her hour journey to the health center. Upon arrival, the attending nurse had no equipment or medicine to help Sega, so she referred her to the district hospital—adding another three hours to the delay. Sega reached the hospital at 8PM. The shifts were changing for the nursing staff so Sega had to wait two hours before a nurse came to see her. She was very weak, dehydrated, and in a lot of pain by this time. The doctor and nurse came to examine her and they determined she needed a C-section. The nurse instructed the mother-in-law to go and buy supplies, such as gloves, blood bags, dressings, infusion sets, and IV fluids, etc. This took the mother-in-law another four hours. After she returned, the doctor began to prepare for the surgery.

SUMMARY

Date	***Time***	***Where***	***Action***
3/6/98	2:00PM	Community	Contractions begin
	6:00PM	Community	Mother-in-law gets TBA
	10:00PM	Community	TBA gives tea
3/7/98	10:00AM	Community	TBA returns, looks for traditional healer
	1:00PM	Community	TBA returns with traditional healer-gives mixture to induce vomiting
	8:00PM	Community	Mother-in-law worries/approval by elders
3/8/98	12:00AM	Community	Approval by elders
	4:00PM	Community	Mother-in-law gets transport
	5:00PM	Health Service	Mother-in-law and Sega arrive at health center
	8:00PM	Health Service	Transport/Arrive at the hospital
	10:00PM	Health Service	Admission
3/9/98	2:00 AM	Health Service	Mother-in-law bought supplies and returned Prepared room
	3:00AM	Health Service	Had C-section
	3:15AM	Health Service	

RESULTS OF SMALL GROUP WORK: FOR GROUP 1/CASE 2A COMMUNITY

1. The factors in the community that contribute to delays in Sega seeking/receiving emergency obstetric care include:

- Women have low societal status.
- Women lack decision-making power.
- Women have low literacy and educational levels.
- Women need a male escort to attend health services.
- People have misconceptions and lack of knowledge about the causes of complications.
- There are no funds available for transport to health facilities when complications occur.
- There is a lack of birth preparedness, high risk pregnancies, and no antenatal care.
- There are no skilled TBAs nor health care workers initially involved in the care of pregnant women.

2. Key messages and desired behavior changes to reduce these delays in the community include:

- Women need to seek appropriate care when necessary.
- Safe motherhood is a joint family/community responsibility.
- Every woman needs a birth plan.
- All women need antenatal care.

3. Interventions that can be undertaken in the community to address these delays/factors include:

- Establish a safe motherhood committee in the community.
- Strengthen advocacy so that health facilities have the necessary supplies available.
- Teach the community how to prepare birth plans.

RESULTS OF SMALL GROUP WORK: GROUP 2/CASE 2A
HEALTH SERVICES

1. Factors at the health center/hospital that contribute to delays in Sega seeking/receiving care include:

- There is no community outreach.
- There are no formal linkages between the health facilities and the community.
- There are no available equipment and supplies on site nor guidance for purchasing equipment and supplies.
- Health services are an hour's distance from the communities.
- There is no communication system in place to forewarn the next level, care facility that an emergency case is en route.

2. Key messages and desired behavior changes to reduce these delays in the health facilities include:

- You are lifesavers.
- Limit labor and delivery time.
- Respond to emergencies.
- Respect traditions regarding birthing practices.

3. Interventions that can be undertaken in the health center/hospital to address these delays/factors include:

- See that the health system gets adequate supplies and equipment; link with NGOs such as the Red Cross to achieve this.
- Train staff to deal with emergencies and complications.
- Train TBAs and link them with the health services system.
- Target decision makers when providing outreach to the community.
- Create a system for emergency care and referral between the community and the health service system.
- Conduct qualitative research to better understand community barriers to seeking services.
- Emphasize supervision of personnel in order to strengthen the link between the hospital, health center, and volunteers.

CASE 2B: COMMUNITY AND EOC
POOR MATERNAL HEALTH SETTING

% of population more than 10 kms from Basic EOC	40%
% of population more than 10 kms from Comprehensive EOC facility	50%
Skilled Providers/Population	30/10,000
% pregnant women who are anemic	40%
% of institutional deliveries	25%
Met Need of Obstetric complications	6%
% of women use a clean delivery kit	25%
Maternal Mortality Rate	600-450

Context

This district is rural with some peri-urban areas. Agriculture and casual day labor are the main occupations. Mothers-in-law and husbands are the main decision-makers, but women go to their mother's house to deliver. Many women are illiterate (60%) and have a low status within society. They can go to the market and seek health services with a female escort. While most people are Hindu, they also have strong traditional beliefs.

Community

Women generally deliver at home; 70% deliver in their mother's house. About one third of the women deliver with an untrained TBA, another 30% with a trained TBA, 20% with midwives, and 20% with private providers.

Isha, a 24-year-old woman in her fifth pregnancy, lives with her husband and mother-in-law, but she went to her mother's house about eight hours away when she was eight months pregnant. She received one ANC visit (being weighed and receiving one TT vaccination). Isha was given iron tablets but only took them for about two weeks because they made her constipated. In the past she has had one stillbirth and one early spontaneous abortion.

Isha began to have contractions at 8PM on October 25, 1996. After three hours she complained of severe back pain. Four hours later, the trained TBA came and the back pain had grown worse. When the TBA did a physical exam she realized that the baby was lying horizontally instead of vertically. The TBA told the family that they should take the girl to the hospital, but they said they wanted the TBA to turn the baby (they said they would pay her). Using hard massage and herbs, the TBA tried for an hour to turn the baby, without success. Since the TBA couldn't move the baby she left to find the midwife. The mother called the village doctor who came an hour later. The doctor gave the woman a shot of ergometrine and tied a cord around the woman's abdomen. The doctor placed the woman in an upside down position (feet higher than her head) and repeatedly yanked the cord over the woman's abdomen to turn the baby. Isha stayed in this position for 12 hours with no progress in her labor.

At 10AM the TBA (she could not find the midwife) returned and again pleaded with the family to transfer Isha to the hospital. The family was afraid that she would die if she went to the hospital--"you know they treat people very badly there, there are no female doctors or drugs and you have to pay a lot of money to die." Finally, after four hours of discussion with the community leaders, a decision was reached to move the woman to the hospital. The father went to borrow money from the village chief and to find transport, which took another hour. By the time the family got the rickshaw, the woman began delivery with a cord presentation. The TBA pushed the cord back in the vagina and placed some rags in the vagina to keep the cord inside the woman.

Health Services

There are eight functional health posts in this district, four health centers, two government hospitals, and two missionary hospitals. After a two-hour journey, Isha reached the government hospital at 6:00PM and was admitted, but her family was not allowed to come in the room with her. The nurse put Isha in a bed near an open window and made her put on a hospital gown. (This was very disturbing to Isha because the cold is seen as very bad in this culture). The cord had prolapsed again during the journey so the nurse did a pelvic exam and pushed the cord back in the vagina (not recommended). The doctor came an hour later to assess Isha's condition--she was exhausted and experiencing contractions every one-to-two minutes. The nurse did a fetal auscultation and the baby's heart rate was very low (indicating distress). At this point in time the doctor decided to do a C-section. The mother had to buy supplies which took two hours and the room needed to be prepared. Isha had a C-section at 10:30PM.

SUMMARY

Date	Time	Where	Action
11/25/96	8:00 PM	Community	Contractions
	11:00 PM	Community	Severe Back Pain
11/26/96	3:00 AM	Community	TBA Arrived and back pain worst-recommended referral but family refused
	4:00AM	Community	Hard massage given by TBA
	5:00AM	Community	Village doctor attempts to turn baby Injection of ergometrine
	10:00AM	Community	TBA returned-recommended referral
	2:00PM	Community	Family/community discussions
	4:00PM	Community	Found transport Cord prolapsed
	6:00PM	Health Service	Arrived at the hospital Cord prolapsed again
	7:00PM	Health Services	Doctor arrived
	7:00PM 9:00PM	Health Services	Mother bought supplies and returned to hospital
	10:00 PM	Health Services	
Room prepared	10:30 PM	Health Services	Had C-section

RESULTS FROM SMALL GROUP WORK: GROUP 3/CASE 2B COMMUNITY

1. Factors in the community that contribute to delays in Isha seeking/receiving care include:

- Fear of going to the hospital; “you know they treat people very badly there; there are no female doctors or drugs and you have to pay a lot of money to die.”
- Costs associated with transportation and the services are high for a community member to handle.
- Traditionally, people deliver at home.
- There is a lack of knowledge on the part of the family about the potential severity of pregnancy and delivery complications.
- There are multiple uncoordinated providers in the area.
- The health care providers are not rapidly accessible.
- Community members have confidence in ineffective and often dangerous traditional practices.
- Community members lack respect for TBA recommendations.

2. Key messages and desired behavior changes to reduce these delays in the community, and their target audiences include:

Family:
- Have a birth plan; it will help save costs.
- Listen to the TBA.
- Familiarize yourselves with the hospital.
- Be aware of home/birth site referral at the community level, with trained providers, who are linked to the next higher level of care as needed.

Community leaders:
- Build support and confidence in the TBAs.
- Market positive hospital experiences.
- Promote the need for ANC.
- Make sure that emergency transportation and money is available for emergencies.

TBA:
- Insist that TBAs make referrals when a problem is beyond her capacity to handle.

3. Interventions that can be undertaken in the community to address these delays/factors include:

- Communicate the above messages widely throughout the community.

- Conduct emergency transportation planning.
- Develop a hospital outreach system in order to decrease the gap in services.
- Establish the legitimacy of the TBA as part of the health care system.
- Conduct a community diagnosis to better understand local beliefs and attitudes regarding childbirth services.
- Based on these findings, conduct community action planning to address the issues.